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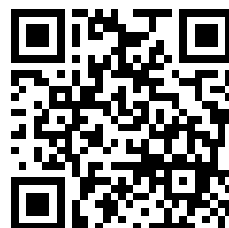
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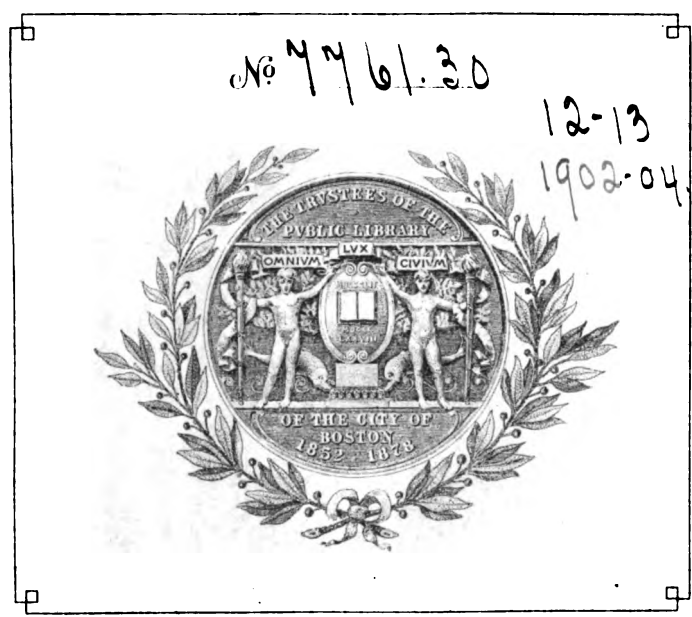
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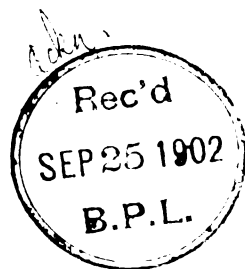
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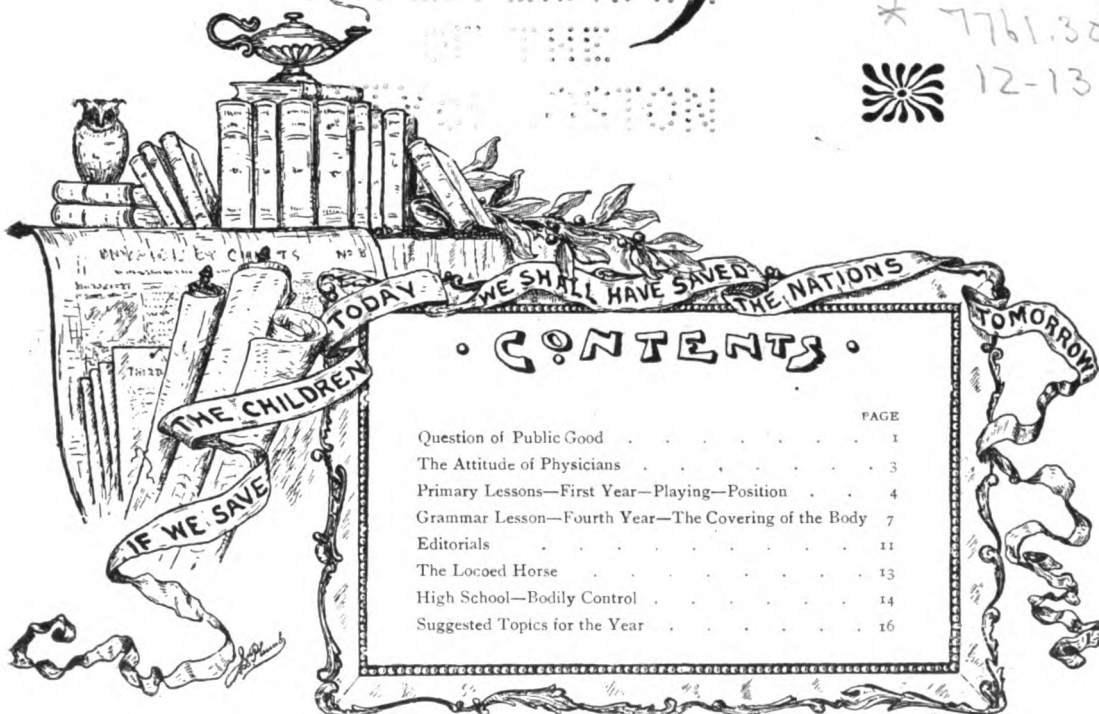
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No. 1

THE DAWN OF AUTUMN

When crickets sing and asters bloom in all the
woodland ways,
And smoke hangs low, and far away the fields are
lost in haze;
When in the corn there is a voice that whispers:
"Summer's gone,"
And here and there a red leaf glows, first lights
of autumn's dawn;
Then, soft as milkweed down, on me
Is laid the hand of mystery.

The woodland wavers; at my feet I hear the tall
grass sigh;
A low, sweet music of regret runs through the
earth and sky;
The creek is caught in a net of mist whose
silvery meshes gleam,
And my heart beats low, and I walk as one
walks wandering in a dream;
For, soft as milkweed down, on me
Is laid the hand of mystery.

—INGRAM CROCKETT

A QUESTION OF PUBLIC GOOD

THE claim urged that there is a reaction on the part of educators in general against the study of temperance physiology in the public schools has little basis in fact. The great body of teachers are for the honest and thorough pursuit of this study. The claim that, for the sake of harmony with the teachers concessions from what the good of the children and the state calls for must be made to satisfy the teachers rests on an unproved assumption as to their attitude. Looked at from the largest point of view, the question is, always, what is for the best good of the children and the state soon to be governed by them. Whoever is seeking first of all for harmony on this question is on the wrong track. The graveyard is the most harmonious place on this planet. There is no conflict of opinion there, but in the world of life where human progress has to beat its way, battle is almost always the price of harmony for the right. If Luther had said we must have harmony in order that the doctrine of justification by faith may go to the people, how different would have been the history of the world.

Every compromise for the sake of harmony and union in that conflict of opinion which preceded the Civil War only hastened the four

years of blood which were the price of freedom for the slave.

The issue now pending is, *shall the coming majorities be educated* in the lower grades of our public schools, where alone they can be reached, to obedience to the laws of health including those which teach total abstinence.

Observation of the results of two schemes of study in temperance physiology, one with books, the other without them, an observation which began twenty years ago and covers not only our entire country but seven or eight other nations that have adopted in whole or in part what is called the American System of Scientific Temperance Instruction, shows that this study must necessarily be an oral and somewhat dogmatic one in the first three primary years. But fourth year pupils, ordinarily about ten years of age, having learned to read, are gaining information in other studies from books that are adapted to their grade in addition to what they learn from the teacher. The same plan is needed in this branch. The pedagogical fad that would remove text-books from these grades seems to be chiefly applied to this branch. Fourth year pupils have reached a stage of development fitting them to understand such simple physiological reasons for obeying the laws of health, including those that teach abstinence from alcoholic drinks and other narcotics, as are necessary to influence the formation of right habits at that impressionable age.

The subject broadens so much, beginning with the fourth year, that the average teacher is liable to teach error rather than truth in trying to put into simple language for a purely oral lesson such a science as physiology, in which frequently she has had insufficient training. Without books in the hands of fourth year pupils, to be used according to the best modern methods, the lessons, if not omitted altogether, are apt to degenerate into mere story telling or repeated exhortation. Such inadequate instruction, instead of truths that will guide to intelligent action, is all that the host of children who leave school at the end of the fourth year to become bread-winners get from the schools under the no-text-book plan.

A course of study that specifies the essential topics to be taught, and at the same time recommends that pupils who can read shall be deprived of books that tell what they ought to know about these topics, is an anomaly. The practical value of a mere mention of topics in a course of study is small, if the printed page

showing what is to be learned about these topics is denied pupils who can read.

The enemy of systematic classroom study of the facts which teach the physiological reasons for total abstinence and other laws of health gains his point when he agrees to the introduction of temperance topics into the course of study, if at the same time he can get the temperance people to agree that text books containing a development of these topics shall be withheld from such pupils.

The brewer hates the indorsed temperance physiologies, especially for the lower grades, *vide Brewers' Journal*. He knows as well as we that the coming law-making power is in the lower grades of the public schools, and he foresees the result upon his trade of giving these children definite printed statements of scientific facts against alcoholic drinks that they themselves can read understandingly at school and at home.

Acquiescence for the sake of harmony is a comfortable mood. It would be a thousand times easier to yield this point of text-books in the fourth year, than to stand for it, but there are always before me the faces of the boys and girls who without the best instruction in the lower grades will get started wrong, and especially of those in the homes of the poor who will never have a fair chance because they must early become bread-winners. The thought of these children whose school days end with the fourth year, the blood of some of them tainted with tendencies born of the cups and pipes of their fathers, has made the writer what critics are pleased to call "aggressive." The knowledge that a large proportion of the coming law-makers of this country will be the children now in such conditions appeals to the fear every true patriot must share for the perpetuity of the republic, if the saloon survives. Only through education of a coming majority can the saloon be abolished.

Present harmony in Connecticut is cited as a desirable example. Harmony is good if it does not cost too much, but in that state it has been bought at the expense of all legally required temperance education for primary children. Fifteen per cent of these, the Connecticut school reports show, do not go to school beyond the primary and so may never get any temperance education. Eighty-five per cent, according to the same report, leave school before completing six years of school. Under the provisions of the new temperance education law, the sixth year is the first where any use of text-books is required, even for teachers; hence there must be a great majority of the children in Connecticut who, under the present "harmony" law, will have no text-book instruction whatever on this subject. Thus the school

has surrendered the future right of way to the saloon.

The plan of harmony proposed in Massachusetts is

First, to take text-books on this subject out of the hands of fourth year pupils who have books in other regular branches.

Second, a proposition not yet formally reported, to take all formal, definite study, either with or without text-books, from the fifth year pupils.

Statistics show what the results of this plan would be, for in one of the most advanced educational centers in Massachusetts forty-nine per cent (almost a majority) of public school pupils drop out before reaching the sixth year. This being true in such a city, it is self-evident that an even larger proportion of all the children of the state fail to reach the sixth year, the first possible opportunity for them to have definite text book instruction on this subject if the above plan is carried out. This would not be a mere modification of method but sacrifice of principle; not a minor point but distinctly a major one, for it would take systematic text-book study on this subject away from the majority of the children of the state, and would prevent such growth of temperance sentiment as is now following the instruction where it is given in accordance with the spirit and letter of the present law.

The advocates of this plan urge that much incidental instruction will be given during the fifth and seventh years should the study be dropped those years. What is called incidental instruction usually consists in waiting until the pupil has, for instance, begun to smoke cigarettes, and then lecturing him on the unadvisability of his course. On the contrary, systematic classroom study teaches the pupil the physiological reasons for not using cigarettes, before he has begun to smoke them. The first is the old reformatory method, namely, moral suasion; the second is the preventive, scientific method which seeks to start the pupil on the right path.

Sixty-one and a half per cent of the population of Massachusetts is now foreign-born or of foreign born parentage (more than a majority), while thousands more of immigrants are being landed at our port to add to this population. No state needs temperance education for all pupils in all its public schools more than this old Commonwealth.

MARY H. HUNT.

A very small boy during his papa's severe illness, heard a great deal said about nervous prostration. Feeling ill one day, he threw himself upon the sofa, exclaiming, "Oh, dear, I'm 'fraid I'm going to have nervous prospects!"—*Ex.*

THE ATTITUDE OF PHYSICIANS

IT is not long since opposers of temperance physiology in the public schools were saying that the movement would be short-lived, because medical men were ranged against it on the ground that the teachings were inaccurate and exaggerated.

This assertion has always been without foundation in fact. More than any other class of people, physicians are in a position to know the ravages which alcohol makes upon the human body and the danger which is inherent in even the most moderate drinking.

There is scarcely a prominent medical journal in the country which has not emphasised this evil and uttered its voice in protest. The most enthusiastic indorsement of the accredited text-books has come from prominent medical authorities in this country and Europe, and doctors everywhere, instead of opposing the study of temperance physiology, are its staunchest friends.

A single morning's mail brings to the desk of the editor of this magazine three pamphlets on the subject written by three medical men in as many parts of the country, the testimony in each case being the same, viz., that the supposed value of alcohol as a beverage is a mistake and that its evil effects should be taught every child in the land.

Dr. W. B. Parks, of Atlanta, Georgia, in a paper read before the Georgia Sociological Society in that city, June 24, 1902, on the origin of alcohol, examines the absurd inconsistencies in the use of alcohol which tradition has handed down to us, and then says:

"I insist that we have reached the stage of the educative method by which the effects of the dreaded monster, alcohol, can be analyzed, not from a collective or rational standpoint, but by the aid of science and chemistry which enable us to demonstrate the poisonous effects of alcohol on all parts of the human organism.

"We are ready to prove that alcohol is a curse as a beverage, and is delusive as a medicine, misleading in its effects both physician and patient, and we would recommend that its evil effects be taught in all our schools, and also taught and demonstrated from the lecture platforms, the pulpits, and in our Sunday schools, vigorously and persistently, without apology or compromise, until the traditional, ignorant and superstitious beliefs are forever eradicated from the minds of the young."

Dr. Didama, Vice President of the American Medical Temperance Association, at the annual meeting at Saratoga, spoke of alcohol as a predisposing and exciting cause of disease and crime, quoting at length from James Thacher, M. D., a direct ancestor of the editor of this magazine, and a prominent physician and sur-

geon on George Washington's staff throughout the Revolutionary War.

Even at that early date, Dr. Thacher had become thoroughly convinced of the destructive effects of distilled spirits upon body and mind, thus foreshadowing the day when alcohol in every guise should be combatted by the intelligent physician.

Dr. N. S. Davis of Chicago, addressed the same association, of which he is president, on "The Relation of Alcohol and Alcoholic Liquors to the Economic, Sanitary, and Moral Interests of the Human Family, and the True Principles of Legislation that should Govern their Use."

Briefly reviewing the direct experimental investigation conducted by American physicians for determining the actual effects of alcohol on the living human body, Dr. Davis comes to the definite conclusion that as the real questions involved "strictly relate to public economy, health, and morals, they must be dealt with in the public schools, the departments of health, the courts of justice, and not in the field of party politics. Already," he says, "has the study of physiology and hygiene, especially including the nature and effects of alcoholic liquors and other narcotic drugs, been made imperative in the public schools of all the states and territories, and text books correctly teaching the great central truth that alcohol is a deceptive and dangerous poison are furnished for their use. Let this be fostered and increased in efficiency, until we have a generation on the stage of action who no longer call diluted alcohol either a beverage or a food but simply a poison drug."

This testimony from Dr. Davis in regard to the use of text-books is especially noteworthy, coming as it does at a time when opponents of temperance education in the schools are trying to deprive a large class of pupils of their use.

Friends of the scientific temperance education movement everywhere will welcome Dr. H. D. Didama, Dean of Syracuse Medical School, and Rev. James R. Day, Chancellor of Syracuse University, as members of the Advisory Board of this Department. Dr. Didama ranks high in the medical world and his knowledge of the alcohol question, being that of the specialist, eminently fits him for service as a member of the text book committee on which he has consented to serve. Dr. Day is well known as an administrator and educator. His councils concerning a form of education which concerns the children of the entire country will accordingly be grateful not to this department alone but to the whole people. The closing words in his letter of acceptance ring true. He says:

"Never was there such demand for all good people to unite in the great cause as now."



IT is noteworthy that there are few complaints against the study of temperance physiology whenever teachers are thoroughly acquainted with the subject, and have a deep sense of its importance in shaping the habits of the children under their care. No one can interest others in a subject which he does not know himself and over which he is not already enthusiastic.

Knowledge, then, of the laws of health and growth, of the workings of all the bodily powers and their development to the highest point of efficiency, of the nature of alcoholic drinks and of their effects upon the structure and functions of the different organs of the body, together with the ravages which these substances have the power to make upon the mental and moral nature of those who use them habitually, even in small quantities, is the first essential. Given this, the teacher's desire for the child's well being will enable him to work out his own methods suited to the various natures with which he has to deal.

It is a help, however, to have material at hand which he can thus adapt, and it is with this thought in mind that the following suggestions are offered.

Before the child who enters school this fall for the first time can know why he should not drink cider or beer, he must learn certain facts of general hygiene and other facts of elementary physiology. He must begin to know himself and what he can do.

His first lesson, therefore, may appropriately be on play; not simply that he may amuse himself as he pleases, but because play is one of the things which will help him grow and give him greater command of his body. The exercises which follow are intended for children entering school this fall for the first time, or for ungraded classes of foreign-born children who know little or no English.

Vary the work continually as indicated, making alternate use of reading matter, class talk, stories and games.

Employ pictures and natural objects freely to

illustrate every point. Give each child a picture of the scene on which the reading lesson is based. These can be had in quantity at one cent each and will prove an excellent investment. Above all, to every feature of the work should be added the strong sweet personality of the teacher, leavening the whole lump and arousing the possibilities that lie dormant in every child.

READING LESSON

(To be written on the board)

Nan is my pet cat.

She has five little kittens.

One day I found them all on the table.

Three kittens were playing with the clock.

One had broken the glass door and put her head in the rim.

Blackie was on the curtain.

What do you think the other kitten was doing?

CLASS TALK

Find how many of the children have kittens at home, and encourage all to talk about them. Ask what their names are. What do they like to play with? Did they ever get into mischief? Tell about it. Will they always stay little kittens?

What makes kittens grow into big cats, and little boys and girls into big men and women? Explain that play is one thing that helps very much.

Find what plays and games the children like best, and select one of these to play with them. One of the favorites is always the following or some of its variations:

THE FARMER'S CORN

1

Now the farmer plants his corn, plants his corn, plants his corn,

Now the farmer plants his corn, plants it in a row.

2

Now the corn begins to sprout, begins to sprout, begins to sprout,

Now the corn begins to sprout, planted in a row.

3

Now the leaves begin to grow, begin to grow, begin to grow,

Now the leaves begin to grow, planted in a row.

4

Now the blossoms begin to show, begin to show, begin to show,

Now the blossoms begin to show, planted in a row.

5

Now the corn is getting ripe, getting ripe, getting ripe,

Now the corn is getting ripe, planted in a row.

6

Now the farmer cuts his corn, cuts his corn, cuts his corn,

Now the farmer cuts his corn, planted in a row.

7

Now he puts it in the barn, in the barn, in the barn,

Now he puts it in the barn, planted in a row.

Let the children choose one of their number for farmer. (1) The farmer places the children one after another in a row, on the floor or stools, hands over their faces. (2) Children put down hands and sit very erect. (3) Rise slowly, hands together pointing upward. (4) Open hands slowly like a flower. (5) Sway slowly from side to side. (6) Farmer touches children one after another and they sink to the floor. (7) Farmer leads children one by one back to their seats.

Whatever play is chosen as the favorite will be called for day after day by the children. This is the time to teach generosity. All can not be leader or have the best parts in any game. Ask why we should take turns. Help the children to understand that selfishness is always unfair to others.

POSITION

OF equal importance with the development of the bodily powers in the child is the training of his mind. Up to the time of entering school his chief business has been to exercise his body through play, now the brain comes in for its proper share.

He must learn to sit still as well as to move about, to stop as well as to go on. The second lesson in hygiene may thus appropriately be on position in sitting and standing.

This will be all the more effective if presented in connection with school life in some other country unfamiliar to him.

Show the picture of the primary school in Brittany. The strange surroundings, and the quaint dress of teacher and children will attract the little ones at the start and arouse interest in the

READING LESSON

This is a school in France.

Does it look like your school?

The children have books just as we have. They are learning to read.

Only girls go to this school. The boys have a school of their own.

See what a sweet face the teacher has.

She wears a white cap, and so do all the children.

They have on wooden shoes.

I think they like to go to school.

CLASS TALK

How do we know these are not American children?

In what ways is their dress different from ours?

Tell how the desks and the room are different. What are the children doing? Find the one that is standing straightest. Which one of you knows how to stand better still? Try it. Let us all see if we can stand straight and tall.

SITTING POSITIONS

Erect: Chest high, chin back, head erect. Lower part of body only against seat back. Feet squarely on floor in front.

Working: Same as above, except that body is bent forward at hips to angle of 45 degrees.

Resting: Same as above, except that entire back, beginning at bottom of spine, rest



"One day I found them all on the table"

against seat back.

Have the children take these different positions several times daily, changing from one to another at the word of command. Vary the exercise by telling a story which brings in these positions and which can be acted out by the children.

ACTION STORY

One of the children in this schoolroom we have been reading about was writing a letter to her teacher. Before she began she took a good position to work in. (Feet squarely on the floor in front, end of spine against back of chair, body bent forward at hips, shoulders erect.)

In her letter she told about the baby sister at home. Sometimes Mamma would let her hold the baby. Then she sat up very straight (lower part only of the body against chair back) while Mamma put baby Rose into her arms. How



PLAYING

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Vary the work continually as indicated, making alternate use of reading matter, class talk, stories and games.

Employ pictures and natural objects freely to

illustrate every point. Give each child a picture of the scene on which the reading lesson is based. These can be had in quantity at one cent each and will prove an excellent investment. Above all, to every feature of the work should be added the strong sweet personality of the teacher, leavening the whole lump and arousing the possibilities that lie dormant in every child.

READING LESSON

(To be written on the board)

Nan is my pet cat.

She has five little kittens.

One day I found them all on the table.

Three kittens were playing with the clock.

One had broken the glass door and put her head in the rim.

Blackie was on the curtain.

What do you think the other kitten was doing?

CLASS TALK

Find how many of the children have kittens at home, and encourage all to talk about them. Ask what their names are. What do they like to play with? Did they ever get into mischief? Tell about it. Will they always stay little kittens?

What makes kittens grow into big cats, and little boys and girls into big men and women? Explain that play is one thing that helps very much.

Find what plays and games the children like best, and select one of these to play with them. One of the favorites is always the following or some of its variations:

THE FARMER'S CORN

1

Now the farmer plants his corn, plants his corn, plants his corn,

Now the farmer plants his corn, plants it in a row.

2

Now the corn begins to sprout, begins to sprout, begins to sprout,

Now the corn begins to sprout, planted in a row.

3

Now the leaves begin to grow, begin to grow, begin to grow,

Now the leaves begin to grow, planted in a row.

4

Now the blossoms begin to show, begin to show, begin to show,

Now the blossoms begin to show, planted in a row.

5

Now the corn is getting ripe, getting ripe, getting ripe,

Now the corn is getting ripe, planted in a row.

6

Now the farmer cuts his corn, cuts his corn, cuts his corn,

Now the farmer cuts his corn, planted in a row.

7

Now he puts it in the barn, in the barn, in the barn,

Now he puts it in the barn, planted in a row.

Let the children choose one of their number for farmer. (1) The farmer places the children one after another in a row, on the floor or stools, hands over their faces. (2) Children put down hands and sit very erect. (3) Rise slowly, hands together pointing upward. (4) Open hands slowly like a flower. (5) Sway slowly from side to side. (6) Farmer touches children one after another and they sink to the floor. (7) Farmer leads children one by one back to their seats.

Whatever play is chosen as the favorite will be called for day after day by the children. This is the time to teach generosity. All can not be leader or have the best parts in any game. Ask why we should take turns. Help the children to understand that selfishness is always unfair to others.

POSITION

OF equal importance with the development of the bodily powers in the child is the training of his mind. Up to the time of entering school his chief business has been to exercise his body through play, now the brain comes in for its proper share.

He must learn to sit still as well as to move about, to stop as well as to go on. The second lesson in hygiene may thus appropriately be on position in sitting and standing.

This will be all the more effective if presented in connection with school life in some other country unfamiliar to him.

Show the picture of the primary school in Brittany. The strange surroundings, and the quaint dress of teacher and children will attract the little ones at the start and arouse interest in the

READING LESSON

This is a school in France.

Does it look like your school?

The children have books just as we have. They are learning to read.

Only girls go to this school. The boys have a school of their own.

See what a sweet face the teacher has.

She wears a white cap, and so do all the children.

They have on wooden shoes.

I think they like to go to school.

CLASS TALK

How do we know these are not American children?

In what ways is their dress different from ours?

Tell how the desks and the room are different. What are the children doing? Find the one that is standing straightest. Which one of you knows how to stand better still? Try it. Let us all see if we can stand straight and tall.

SITTING POSITIONS



"One day I found them all on the table"

Erect: Chest high, chin back, head erect. Lower part of body only against seat back. Feet squarely on floor in front.

Working: Same as above, except that body is bent forward at hips to angle of 45 degrees.

Resting: Same as above, except that entire back, beginning at bottom of spine, rest

against seat back.

Have the children take these different positions several times daily, changing from one to another at the word of command. Vary the exercise by telling a story which brings in these positions and which can be acted out by the children.

ACTION STORY

One of the children in this schoolroom we have been reading about was writing a letter to her teacher. Before she began she took a good position to work in. (Feet squarely on the floor in front, end of spine against back of chair, body bent forward at hips, shoulders erect.)

In her letter she told about the baby sister at home. Sometimes Mamma would let her hold the baby. Then she sat up very straight (lower part only of the body against chair back) while Mamma put baby Rose into her arms. How

important she felt! She wanted to rock back and forth (rocking motion), but the doctor said that was not good for baby, so she sat bolt upright and played she was a coachman on his box. When her back felt tired she leaned back a little, and tried to make every part of it touch the back of the chair.

STANDING POSITIONS

Rising: Turn in seat to face aisle. Body erect, hands in lap. Rise slowly to feet, bearing weight on right foot, bring left foot up to right. Repeat, bearing weight on left foot and bringing up right foot. Repeat, bearing weight on both feet. In no case should children help themselves up by placing hands on the desk or seat.

Standing: Heels together, or nearly so. Toes turned outward. Hips back. Chest high. Shoulders back. Hands at the side. Head erect. Eyes straight in front. Chin drawn in.

Filing: Standing position in rows or files. Face front. Repeat until this position is taken in unison. Advance five steps. Halt. Face the right. Halt. Face the right. Advance five steps. Be seated. Repeat until each file can rise, turn, move to any part of the room, and return to its row.

Marching: Standing position by files. Face front. Mark time softly by the feet, first to the count, left, right, left, right, etc., then to taps of the bell or piano. As soon as the children catch the step, have each file in turn march out, across the room, and back to place, the other files marking the time.

ACTION STORIES

(To illustrate Rising and Standing)

Up in the branches of a maple tree was a robin's nest with three baby birds in it. As soon as it was fairly light one morning, one little robin sat up as straight as he knew how (erect position). Then he raised himself on his right foot and drew the other up after him. How tall he was!

By this time, number two was awake. He stood on his left foot and drew the right one up after him. He was tall enough to look over the edge of the nest into the big tree.

Then the third little robin thought it was his turn. He stood up on both feet at once, higher and higher, till he could peep over the heads of both his brothers. Then he gave a little hop right out of the nest.

Not one of these robins used his wings or his beak to help him get up. They all knew that their legs were made to stand on, and they used them for that purpose.

(To illustrate Filing and Marching)

One day there was a long procession on the fair grounds. Ten fire companies (or as many as there are files of children) were to march in it. First came Company A in red and black uniforms, then Company B in crimson and gold

with a tall drum major at the head (etc., until each file has been designated and stands in position).

They marched up Broad street, Maple street, Brook avenue (aisles in the school room), then down Main street past the Grand Stand (platform), where the Governor (teacher) sat to review the procession.

cession.

Every one in line stood as straight and as tall as he could, and all kept step to the music, left, right, left, right. The band played and flags waved. It was a splendid procession.

Johnny—"I wish I was Tommy Jones."

Mother—"Why? You are stronger than he is, you have a better home, more toys and more pocket money."

Johnny—"Yes, I know, but he can wiggle his ears."—*Men of To-morrow.*

Teacher—"Frank how many different kinds of force are there?"

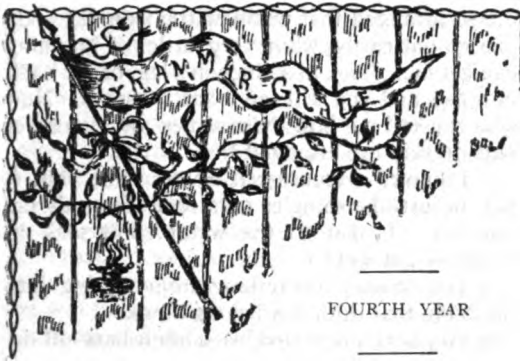
Frank—"Three kinds."

Teacher—"Name them."

Frank—"Bodily force, mental force and the police force."—*Tid-Bits.*



A School in Brittany



THE COVERING OF THE BODY

SIGNS are not wanting that the business world is coming to the aid of the hygienist in the matter of personal cleanliness. Public offices are now equipped with every toilet convenience, and even left partly unfinished until rented that the prospective tenant may have the plumbing arranged to his liking.

Such fastidiousness in employers means radical changes in the entire personnel of the establishment. The business man who has a private bath attached to his office that he may leave it as immaculate as he enters, will not tolerate a slovenly bookkeeper or an office boy with unkempt hair and finger tips stained with cigarettes.

Thus it has come about that young people who want work nowadays must look, smell and be clean to a degree undreamed of ten or even five years ago. It is not a matter of inclination but of business necessity, and those who earliest learn the lesson will find themselves in possession of the best places.

Tact must be used in presenting the subject of cleanliness. The majority of children are not naturally careful of their personal appearance, but they resent being told of it. Begin by studying the skin itself and finding:

- What it is for.
- What it is made of.
- Why it does not wear out.
- How it should be taken care of.

Make the work objective. Whatever the child can see or hear or handle will appeal to him and can be made a part of his working knowledge.

THE LESSON

"This is our first physiology lesson this year," said Miss West, "and it is about a part of the body that is always in sight whether we look at a person's face or his hands. We can see it even if he turns his back. What is it?"

"It is the skin."

"Right, and one of the things we want to know about it is

(1)

WHAT IT IS FOR

I notice that Jack has cut his finger. Perhaps he can tell us."

"It is to keep the blood in," was Jack's instant conclusion. "It would all run out if we didn't have any skin on our bodies."

"Look at this chart of the blood-vessels and see if Jack is quite right."

"I don't think he is," said Hetty, "because the blood isn't loose in the body; it is in little pipes."

"Yes, it is only when we cut one of these little pipes that the blood can run out," added Miss West. "But they are so close together that we can hardly prick ourselves anywhere without puncturing one of them."

"I think the skin is to cover up our bodies," said Rose, "and to keep them from getting hurt, because when I hurt my hand last week, it was all red and sore till the new skin grew."

"How many agree with Rose that one use of the skin is to protect our bodies?" asked Miss West. "I do, too, but we have not found out the whole truth yet. You have all played blind man's buff? How can one who is blindfolded tell whom he has caught? He can not see."

"He feels of his clothes."

"By touching him."

"By the sense of touch."

"Where is the sense of touch?" asked Miss West.

"Oh, I know what you mean," said Agnes, "It is in the skin, and that is another use the skin has. It gives us the sense of touch."

Miss West started down one of the aisles with a basket filled with different small articles. "Shut your eyes and feel of what I give you until you know what it is and can tell about it. Then put it in your desk and open your eyes."

Five or six of the class were sent to the board to write their discoveries, while the rest discussed what they had found.

Robert spoke first:

"You gave me a knife with two blades, one large and one small. It had a wooden handle tipped with steel. It was about three inches long."

Elsie: "I had a round stone about as large as an egg. It was heavy."

Kate: "Mine was a silk handkerchief. It was nearly square."

"What color was it?" asked Miss West.

"I don't know," said Kate, "you told us not to look."

"That is right. We can not tell the color of anything by feeling of it. What qualities of an object can we find out by touch?"

"Yes, its shape, size, whether it is hard or soft, rough or smooth, thick or thin, heavy or

light, warm or cold. You see the skin tells us a good many things through this sense.

"Now open your physiologies, and see if they tell anything more about the work of the skin. How will you find the place? Harry is right, look in the index for it. We will use this chapter for our reading lesson this afternoon.

(2)

WHAT IT IS MADE OF

"Let us begin our lesson today by taking a good look at the skin on our hands. Shut your hands tight and find if it fits perfectly in every part. Open your hand and answer the same question."

"It is loose and wrinkled on the joints, when I open my hands," said Ella.

"So it is. Take hold of the wrinkle on your left forefinger and hold it tight. Now shut your finger. Can you do it? Why not?"

"There isn't room enough. Oh I see now what the wrinkles are for. The skin is loose on the joints so that we can move them."

"What do we call anything that will stretch?" asked Miss West. "Pinch up a bit of skin on the back of your hands and find whether the skin is elastic. How do you know?"

"Press your fingers close together and hold them up to the light. What do you see? What gives them that rosy look about the edges? Would you think then that the skin is thick or thin? Find the thickest places, the thinnest. What do we call places on the hand which get very thick and tough from rowing a boat or doing any hard work?"

"What will happen if we dip the corner of a handkerchief in water? Ralph may try. Put the end of your finger in the water too, and keep it there as long as you do the handkerchief.

"Why does the water rise in the handkerchief and not on your finger?"

Nobody knew, so Miss West told about the pores in the handkerchief which soaked up the water, and showed them through the microscope.

"There are pores in the skin, too, but they

are so arranged that waste matter from the body can go out easily, while very little of anything can get in. Look at a chicken's leg, or the back of a fish, and you will see what I mean. Now who can tell me how these scales or pieces of outside skin are arranged?"

"I know," volunteered Scott, "the skin is put on just like shingles on a roof, they all lap one way. Is that so the water can't soak in when we get wet?"

"Yes, to keep everything from getting into the body that does not belong there.

"You have all peeled black birch bark off the trees to eat. Here is some now. Look at it carefully and find how many layers it has and how they differ."

"It is in two layers," was announced presently. "The one on the outside is thin and dry. The inner layer is thick and dark green."

"The skin grows in very much the same way," said Miss West. "It is in two layers. The outside layer has done growing and is all the time wearing out and dropping off. Stick a pin through it just at the root of your thumbnail. Does it bleed or hurt? That is because there are no nerves or blood-vessels in this layer. They are all underneath in what is called the true skin, or the skin that is alive."

"The oil glands which keep the skin smooth and soft are down in this layer, and the sweat tubes through which the perspiration and a great deal of the waste matter of the body is all the time passing off. Here, too, is where the hair which grows out of the skin has its roots."

(3)

WHY IT DOES NOT WEAR OUT

"How many of you are wearing the same shoes you wore last year at this time? Why is it that we have to buy new clothes so often, while we keep the same skin? Does the skin ever wear out?"

"I think it does," said Grace. "Mine peeled off in little flakes after I had the measles."

"How is it when you take baths? Did you ever notice tiny white particles in the air after



"You'll leave enough to grow, won't you, mister?"

giving the body a brisk rub? Those are bits of worn-out skin. We are all the time losing this body covering and it is always growing up fresh and new underneath, but we get rid of it so gradually that we hardly know it. You know how quickly you wear holes in your gloves and mittens. You would wear out the tips of your fingers just as quickly, if new skid were not always growing to make up this loss.

"What do we call the white powder which we sometimes brush out of our hair? Perhaps you will be surprised to find that dandruff, too, is nothing but dead skin which is continually being shed to make room for a new head covering."

(4)

WHAT IT NEEDS

"Why is it that people are so particular to wash the dishes after each meal? Why not use them just as they are?"

Laura: "It wouldn't be nice. They are dirty, and our food wouldn't taste good."

"Of course not," said Miss West, "but I have known people who were not particular to bathe every day, and that is quite as important as washing the dishes.

"John; won't you step to the board and hold the palm of your hand against it for a moment. What do you see on the board after taking your hand away?"

John: "The shape of my hand. It looks all moist, but my hand was dry."

Miss West: "It felt dry perhaps, but the dampness on the board shows that your hand is really perspiring all the time whether you know it or not. You would find the same dampness if you were to lay any other part of your body against a cold surface. This means that waste matter is continually passing off through the pores of the skin, and needs to be got rid of. How are we to do it?"

"You need not answer that question today. Think about it awhile and remember that the hair, teeth and nails belong to the skin and need the same care. Ask all the questions you like and read everything your physiologies say on the subject. Tomorrow I shall ask you to write full directions about bathing and personal cleanliness."

The results were excellent.

"If you do as well as you write," said Miss West, after looking over the written work, "I shall be proud of you. I am sure you would not fail, as one boy I know of did, to get a position after leaving school, because his bad breath showed that he did not keep his teeth clean.

"Suppose we talk over the papers now and have all the points written on the board. Then

I will see that each of you has a copy to paste in the fly leaf of your physiology."

POINTS TO REMEMBER

The entire body needs a bath every day to keep it clean.

The hands need washing before each meal, and after play or work.

Healthy people should take a cold shower or sponge bath every morning.

Once or twice a week, a warm bath with soap is needed.

We should not bathe just before eating, or when heated from play or work.

The head should be well brushed every day to keep the scalp clean.

We should brush the teeth after each meal.

The finger-nails should be kept trimmed.

All clothing worn during the day should be aired at night, and that worn at night should be aired through the day.

A SUGGESTION

In spite of all we read about cleanliness and the necessity of frequent bathing, it is astonishing, says an exchange, how many mothers, careful perhaps in all other particulars, allow their children to be absolutely unclean. The baby is bathed most religiously every day, as it should be; but why should a child in the same family, old enough to be playing all day long and in all kinds of places, be given a bath but once a week, winter and summer?

There are unfortunately some mothers who tumble their little folks into bed with black feet, brown necks, dirty hands, and uncleaned finger-nails. In the care of children, as in everything else there should be system.

When children are in school, their playtime is limited and they should be allowed to take advantage of every minute of it, out-of-doors if possible, until supper-time.

After their supper, which should be light, let them have a little music or reading, or a quiet indoor game. Then have them prepare for bed. Necks, ears, faces, hands, and feet should be given a good soap-and-water bath every night before going to bed; and if possible give a full bath Wednesday as well as Saturday.

CLEANLINESS AND NEATNESS

The pupil who wishes to be comfortable and healthy, who wishes to have the good opinion of friends, needs to be clean in person, dress and conduct. No one has the right to be offensive or injurious to those who must be with him. One is not only more comfortable and healthy by being clean, than he would otherwise be, but he is mentally in better condition to

study or play. Self-respect enables him to do his best.

The body, hands, face, hair, nails, teeth, should be kept in good condition. The necessity of frequent bathing of the whole body needs to be impressed on all pupils and especially on those whose opportunities for cleanliness are not good. The unpleasant odors of the unclean body are very offensive. Water, soap, towels, combs, should be of easy access at school. The teacher should see that they are used as frequently as necessary. Health requires that the teeth be kept in good condition, and the law of politeness requires that they be kept clean and sound. The use of tooth brushes is imperative, and decaying teeth need the treatment of a dentist.

Clothing and shoes are to be kept neat and clean. Brushes help the appearance and condition of clothing. Benzine may be used to remove grease spots. Many teachers are blamable for the carelessness of pupils respecting the cleaning of their shoes. Dirt should be removed from them before the room is entered. Mud on the floor is not only unsightly and inconvenient, but when dried and crushed its dust is unwholesome. The pupil is more careful to keep out of mud when his shoes have been brushed than when they have received no care.

The seats and desks of pupils and the other furniture, the floors, walls and ceilings of the room should be so clean as to encourage pupils to keep them and themselves clean. Pupils should take pride in preserving their school property in the best condition possible, and no carelessness in handling or marking books or other possessions should be tolerated.

Work on the board or paper should be neat. Slovenliness in any school work leads to carelessness in habit and takes enjoyment from life and success from its efforts.

Thought and speech and every act should be pure and clean. Impurity within is worse than filth without. One's way of thinking determines his way of life. If pure, clean thoughts are

cherished, the words used to express them must correspond in purity, and the acts of the character will be chaste and virtuous.

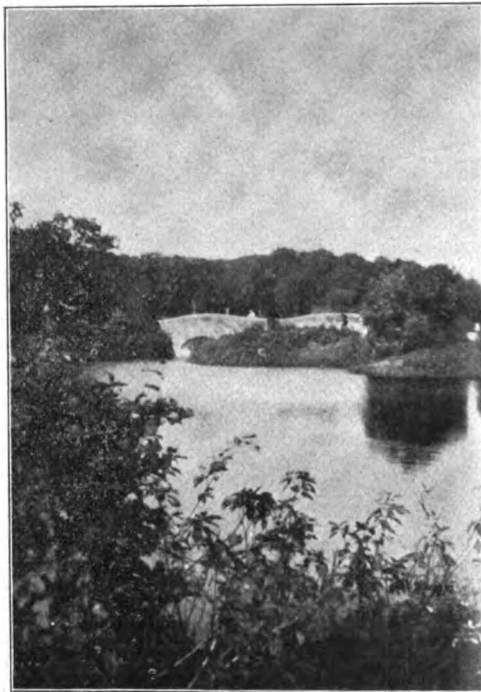
CLEANLINESS A DECIDING RECOMMENDATION

"A gentleman advertised for a boy to assist him in his office, and nearly fifty applicants presented themselves. Out of the number he selected one and dismissed the rest.

" 'I should like to know,' said a friend, 'on what ground you selected that boy, who had not a single recommendation?'

" 'You are mistaken said the gentleman, 'he had a great many. He wiped his feet when he came in, and closed the door after him, showing

that he was careful. He gave up his seat to that lame, old man, showing he was kind and thoughtful. He took off his cap when he came in, and answered my questions promptly and respectfully, showing he was polite and gentlemanly. He picked up the book which I had purposely laid on the floor, and replaced it on the table, while all the rest stepped over it, or shoved it aside, and he waited quietly for his turn instead of pushing and crowding, showing that he was honest and orderly. His clothes were carefully brushed, his hair was in nice order, and his teeth as white as milk. When he wrote his name I noticed that his finger-nails were clean, instead of being tipped with jet, like that



"Like a rich mirror at the feet.
The broad lake spreads its waveless sheet."

handsome little fellow's in the blue jacket. Don't you call these things letters of recommendation? I do, and I would give more for what I can tell about a boy by using my eyes ten minutes than for all the fine letters he can bring me.' "—*Practical Educator*.

"The hill, though high, I covet to ascend,
The difficulty will not me offend,
For I perceive the way to life lies here.
Come, pluck up heart! let's neither faint nor fear!

Better, though difficult, the right way to go,
Than wrong, though easy, where the end is woe."

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Here and yonder, high and low,
Golden-rod and sunflowers glow;
Here and there a maple flushes,
Sumach reddens, woodbine blushes,
Purple asters bloom and thrive,—
I am glad to be alive.

R. K. WEEKS.

SEPTEMBER GREETINGS

SEPTEMBER has come again. The long summer vacation playtime is over. From the woods and mountains, the country and seashore, the children and teachers are coming back to the school. Does the transition seem at first an unattractive one? Is any one saying that the teacher's work is never done, that although the children taught last year have passed into higher classes, there will be another flock of little ones with the same small undeveloped minds to be taught the same lessons and started on the same road to citizenship; that one's patience will be taxed for another year just as it has been in the past?

This continually repeating round of classes passing on and others coming to take their place is a part of the plan of human life. Furthermore, whoever can help a child to acquire what he should learn in one year and fit him for the advancement of the next year is doing a work in which the angels share, for we are told in Revelation that "their angels (the children's angels) do always behold the Father's face."

You think it would be a great thing to teach a prince, but each of these little ones in your schoolroom has a soul with Godlike possibilities which it is your mission to help develop.

Complaint is often made that the teacher of today is expected to make all instruction enticingly beautiful and as interesting to the child as the most exciting play; that this is an unsupportable tax on the teacher's vitality. All education that is progressive must be somewhat experimental. Of the countless experiments

that are in vogue, now this method and now that is on trial. But there are eternal verities which never change, and first among them is the determination to start these little ones aright as they leave the home and enter the larger life of the school. The habits which they will form under your guidance in these earliest years, the notions of right and wrong, of honor and truthfulness and loyalty which they are here and now to acquire will very largely determine their character for all the future. When such a spirit illumines every method we may use, the good features of each will be brought to light, while everything that can not stand this supreme test will shrivel until it disappears.

THE MASSACHUSETTS COMMITTEE OF TWELVE

SINCE our last issue a preliminary report upon a course of study in physiology and hygiene, suggesting the topics to be taught on this subject in the first four years of the public schools of Massachusetts, has been published by the Committee of Twelve.

Inasmuch as a note at the end of the report merely states that three members of the Committee had not affixed their names to the same, but does not include their reasons for withholding their signatures, reasons which should in all justice be known, we give space to the following statement:

At the last meeting of the Committee of Twelve, on May 8th, when the question of the adoption of the report on the course of study for the first four years came up, three members, representing three different temperance societies, stated that they could not sign the report unqualifiedly because it contained a recommendation "that instruction in the fourth year should be without the use of text-books in the hands of pupils." They heartily approve of the recommendation of merely oral instruction for the three primary years. That is what they have always advocated, but they could not agree to withholding books from fourth year pupils, for reasons which they had already stated to the Committee, and which they had formulated and signed in a minority report they were then ready to present.

Just at this point a motion was offered that "the editing committee be instructed to insert the recommendation that in the course of study there should be a supplementary use of books." This motion, the minority understood, took the place of the one previously passed which excluded books from fourth year pupils. With this understanding, the minority voted for the new motion and agreed to the whole report, glad that a seemingly unanimous conclusion had

been reached. But the last galley proof of the report (as now published), presents the matter in a very different light. Its recommendations on this point read as follows :

"(2) The instruction shall be oral, that is *without* the use of text-books in the hands of pupils, during the first *four* grades or years of school.

"(3) There shall be a supplementary use of books."

The kind of books is not specified.

Thus the objectionable recommendation that instruction shall be *without* the use of text-books for pupils in the fourth year was retained in the report, contrary to the understanding of the minority, who had never for a moment imagined that it was the purpose of this Committee to offer two such contradictory recommendations, one of which (2) refuses books in this study to fourth year pupils, while the other (3) calls for their use. It may pertinently be asked, who is to have "this supplementary use of books"? Evidently not fourth year pupils, because of the explicit recommendation that this instruction should be *without* the use of books by pupils in the fourth year.*

The minority, therefore, could not conscientiously sign the report without qualification. They accordingly withdrew their names, sending in the following

MINORITY REPORT

The undersigned members of the Committee of Twelve, while in accord with much of the report of the Committee, regret that it does not definitely state for the guidance of teachers in each grade what are the "anatomical and physiological facts" necessary to enable pupils to understand the hygienic facts recommended to be taught.

We must also enter an earnest protest against the recommendation that in the fourth year "the instruction shall be oral, that is, without the use of text-books in the hands of pupils" as one source of information, for the following reasons :

First, The law of Massachusetts requires this subject to be taught "as a regular branch to all pupils in all schools." Competent legal opinion has been given to the effect that the phrase, "shall be taught as a regular branch", means that it shall be taught in the same manner as other regular branches, such as geography and arithmetic, which are commonly pursued in the fourth year with text-books for pupils' use as one source of information. No adequate reason has been given why this subject which is

*See "A Question of Public Good," page 1 of this issue.

so vital to physical and moral welfare should be an exception in this respect.

Second, Competent educators have expressed the opinion that lack of qualification of teachers as a whole in this branch makes the additional helps of properly graded books for pupils' use an imperative need in the fourth year.

Third, The object of this study, as stated, being to guide the formation of right habits, every possible help should be furnished the pupils in the most impressionable, habit-forming years, of which the fourth school year is one. The pupils are then less responsive to mere oral instruction, and being able to glean information from the printed page, should each be supplied with suitable helps. A supplementary reader *in the library* will not take the place of books regularly to be used by pupils in class work under the teacher's guidance.

Fourth, Many children leave school from the lower grammar grades. This is especially true of the vast host of foreign-born children who are coming to us. Entering the schools to learn the language, and to read and write, few stay beyond the fourth year. In order that these children who bring old world drinking customs with them may become good American citizens, they should receive all the information in every phase of hygiene, including total abstinence, which may be gained from a text-book in addition to oral instruction.

(Signed) : JESSIE FORSYTH,

International Superintendent of
Juvenile Work for Good Tem-
perars.

MARY H. HUNT,

World and National Superin-
tendent of the Department of
Scientific Temperance Instruc-
tion of the Woman's Christian
Temperance Union.

ALBERT H. PLUMB,

Vice-President of the Massa-
chusetts Total Abstinence So-
ciety.

It is significant that the three who signed the minority report are the only members of the Committee of Twelve whose temperance work has for years led them to a special study of its educational problems.

A LABOR SAVING DEVICE

"What will you do when you are a man, Tommy?" said Aunt Frances to her nephew one day.

"I'll grow a beard," was the unexpected reply.

"Why?" she asked.

"Because, then I won't have nearly so much face to wash," said Tommy.—*Little Chronicle*.

THE LOCOED HORSE

BERT stood with a cigarette in his hand, looking at the hired man who was sitting on a box in the barn door.

"Chetty," he said, "I want the same horse I had last year,—Babe, wasn't it?"

"Yes," said Chetty, "I should think you would; she admires you."

Now Chetty, whose size and disposition inclined him to be moderate in his motions, was gifted with eyes which saw everything, large and small, within the range of his vision. He had been the chief manager of the stock on the Colorado ranch belonging to Bert's father ever since Bert could remember; and Bert had learned that Chetty's odd remarks had hidden meanings, which it was well for him to find out cautiously if he did not wish to be caught in some practical joke.

"It's mutual, Chetty," he replied, "I admire her. In my whole freshman year at college—a year wherein I gained great wisdom, Chetty—I saw no finer animal than Babe. Has Babe acquired as much wisdom as I, Chetty, during the past year?" and Bert replaced his cigarette in his mouth, and beamed on Chetty with mischievous eyes.

Chetty watched Bert with an inscrutable smile.

"I believe," he said, "that she's about even with you,—may be a little ahead."

Chetty arose slowly, and called one of the cattle-boys who was riding by.

"Dick," he said, "bring up Babe,—will you?"

Dick stopped short.

"Babe?" he asked.

"Yes," said Chetty, shortly, deliberately seating himself with his back to the boy.

It was not long before a handsome bay mare stood in the door. Bert had gone in to put on his riding boots. "He came out quicker than was his habit, for he thought he heard a wild clatter of hoofs. Chetty was sitting on the box, however, and Babe was standing, saddled, with her head down. Now Bert had lived on a ranch every summer of his life, and could ride a bucking horse, though he did not know much about the care of the stock.

"Will she buck?" he asked, as he prepared to mount.

"She won't mean to, young man; but her nerves are not so steady as they were last year. Be careful!"

Bert sprang into the saddle. With a nervous quiver, Babe rose on her hind feet straight into the air and fell over backwards. Bert sprang off as she rose, and stood looking at the horse in astonishment.

"What's the matter?" he asked, as the shaking horse scrambled to her feet.

Chetty did not answer, and Bert mounted again. This time he was able to get the horse into the road. Babe went but a little distance, however, before Bert turned and rode back to the barn, the horse staggering from side to side.

"Chetty," he said, "she's crazy. What's got into her?"

Chetty, who had risen while Bert was mounting, now sat down and spoke slowly, with his eyes on the horse:

"It's just as I said, young man. You see a horse hasn't so long to live as a man, so she's hurried her education a little. She seemed to know it when you had to begin to smoke last fall to keep awake for your studying, you remember. Feed got low in the pasture, and she took to gnawing a weed,—seeing she couldn't smoke it. She got into the loco-weed, and got down to the roots. It made her feel rather good, and she hunted for some more. It works on her nerves, like that stuff on yours," pointing to the cigarette. "When we took her up in the fall, I saw she was some locoed, and I reasoned with her. She said I needn't worry,—fact was, she could stop any time, and just did it for a little fun. But the amount of it was, her nerves were about gone then, and when we put her out in the spring, she got some more, and now she can't get along without it."

Chetty had been removing the saddle and bridle as he spoke, and now he led her to the pasture back of the ranch house. Then he let go of her head.

"Go up to her," he said to the boy.

Bert slowly walked toward the poor animal. She seemed to listen as he came up to her. Her ears were pointed towards him, but when he stood before her, and, looking into her glassy eyes, said, "Poor Babe!" she gave one wild snort, and ran from him like a wild horse.

"She can't see much," explained Chetty. "It's affected the nerves of her eyes."

Bert sat on the box by Chetty.

"So that's a 'locoed' horse," he said slowly. "Poor Babe! Is she good for anything?"

"Not one thing," said Chetty.

As Bert got up and walked into the house, he threw away his cigarette.—*Fannie Hyde Merrill, in Sunday School Times.*

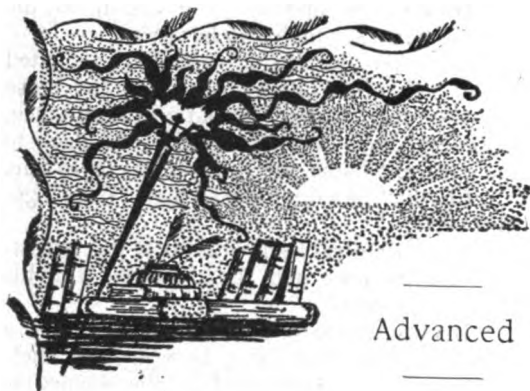
"I hope they don't give my little boy any naughty nicknames in school?"

"Yes, ma, they call me 'Corns.'"

"Dreadful! And why do they call you that?"

"Cause in our class, you know, I'm always at the foot."

—*Woman's Voice.*



THE CONTROLLING SYSTEM OF THE BODY

NOT long ago a telephone girl answered a call, made the required connection, took the record, and closed the line again all in ten seconds. That was quick work, but it is far surpassed by the rapidity with which the brain receives impressions through the senses, registers them, and transmits an answering message to the required part of the body.

Every line of business is making increasing demands upon the people today, and these demands can be met only by a correspondingly well trained nervous system. How to increase the efficiency of this controlling bodily force is a great problem which vitally concerns high school pupils soon to enter the business world for themselves.

The importance of the nervous system will be more plainly seen by comparison. Choose the most important business at hand, which may be a silk or cotton mill, a shoe factory, a creamery, or a meat packing establishment. What is necessary to its success? It must have a capable manager who has every detail of the business at his finger-tips and is constantly in communication with every employe, either in person or through a substitute such as the telephone.

Show that the same need exists in the body. The hand, the foot, the eye, every organ, in fact, must execute a thousand motions during the day. How does each know what to do; when to begin, when to stop? Such knowledge is possessed only by the brain, but this manager is shut up in the skull and never sees one of the servants it is continually directing. How are its orders carried to every part of the body?

The next point to consider is thus

ITS MODES OF ACTION

Notice that although we speak of the brain as one organ, it acts through its various parts rather than as a whole. Find these important

centres and the parts of the body which each controls. Which part of the brain, for instance, governs the movements of the body? Where is the centre for sight? for smell?

Find which side of the brain has been injured when the right side of the body is paralyzed, and explain the reason. Why is the right side of the brain better developed than the left in left-handed people?

Have each one in the class write down ten different things he has done during the day, which require thought, and five things which one can do without thinking. Apply the terms voluntary and involuntary to these kinds of action. Why are both necessary? Which is used when we breathe? dodge a blow? wink? learn to skate? Which regulates the heart's action?

From a chart of the brain and principal nerve fibers and cells point out the ganglia which lie in a double row along the spinal column. Each ganglion receives a bundle of fibers from the spinal cord, and sends out a bundle to organs of the chest and abdomen, or to larger ganglia in the middle of the abdomen. Find the reason for these connections?

Show how all the organs in the digestive system are in direct nerve communication with one another. How is this an advantage? How are they connected with the central system. Why are these nerves and ganglia called the sympathetic system? Why does the pancreas begin to secrete pancreatic juice as soon as food enters the stomach? Give other illustrations.

How can a voluntary act, such as typewriting, become automatic? Why is this an advantage? Explain how a person can do two things at once.

ESSENTIALS TO ITS BEST DEVELOPMENT

One of the chief reasons why the American workman is superior to the laborer of other lands is because he thinks for himself and acts intelligently. He has a trained nervous system. How can one train this controlling system of the body to make it increasingly valuable?

In the first place, it must *know* things, and it gets this knowledge through the senses. Each sense must be given practice to make it acute. What has our brain learned through the eyes today? through the ears? through the taste? smell? touch?

The second essential is practice in *doing* things in the best way until each is done as well as possible. What training of this kind are we giving our nervous systems already? How can we improve it? Why are rest, nourishing food, frequent change of work or play, and daily outdoor exercise all necessary to develop the nervous system?

There are other conditions which weaken the nervous system as much as these tend to

strengthen it, which confuse the general manager, mind, enfeeble the will, relax the attention, and send distorted messages to every organ. What are they? How are they to be met?

Discuss these points fully and candidly, taking this opportunity to show the value of that self-control which leads one to refuse to gratify any degrading taste or appetite. Emphasize the fact that "the essential difference between the poor man and the mentally strong man is that while the former allows his impulses and passions to rule him, the latter rules his impulses and is master of himself."

AUTHORITATIVE QUOTATIONS

ALCOHOL ALWAYS A DESTROYER

Alcohol is a poison in the use of which there is no moderation, for it poisons invariably and always; and when we think that it does not poison we merely fail to discover its effects. In the less delicate parts of our physical machinery it works havoc enough, but in the more minute and delicate mechanisms which have to do directly with accuracy of thought and thus with our real life, alcohol, even in minute portions, never appears, save as a destroyer.—WM. P. F. FERGUSON, B. D.



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NO SAFETY IN MODERATE DOSES OF ALCOHOL

Doses of even 7-10-15 gm. ($\frac{1}{2}$ - $\frac{1}{4}$ oz.) of alcohol, which correspond to a glass of wine or a pint of German beer (certainly a most moderate dose), are sufficient to paralyze, retard or disturb all the central and centripetal cerebral functions. The number of mistakes in calculation, setting type, memorizing, etc., is increased.—PROF. AUGUST FOREL, M. D., Ph.D., LL.D.

ALCOHOL PREVENTS SELF-CONTROL

Peculiarly susceptible is the brain to the poisonous and disorganizing action of alcohol. The nobler self is dethroned and the meaner and baser self usurps its place.—F. H. WHALMSLEY, M. D., Medical Supt. Metropolitan Asylum.

BRAIN CELLS THE FIRST SUFFERERS

Science has established that alcohol destroys first and most those parts which are most delicate and most recently developed. These are those wonderfully delicate brain cells upon whose proper formation the difference between men and beasts chiefly depends.—DR. FRANZ SCHONENBERGER, Bremen, Germany.

A HABIT THAT WEAKENS THE BRAIN

That the tobacco habit should be taken up early in youth, with the nervous system in perfect condition, and a disease deliberately invited that makes the highest sense of comfort impossible except drawn through a cigar,—that such a habit should be deliberately formed when there is not the least sense of any want for its

soothing effects, is a human anomaly. No tobacco user ever has the supremest use of his brain.—E. H. DEWEY, M. D.

CIGARETTES DESTROY NERVE CONTROL

Under no circumstances will I hire a man who smokes cigarettes. He is as dangerous at the front

end of a motor as a man that drinks; in fact he is more dangerous. His nerves are bound to give way at a critical moment. A motorman needs his nerve all the time, and a cigarette smoker can not stand the strain.—GEORGE BAUMHOFF, Supt. Lindell Railway.

"Can you spell kitten, my little man?"

I said to Jack, five years old;
And behind his back Jack put both hands,
And tossed his locks of gold.


"Too hard?" I asked; then his face grew grave,
And he said, "It isn't that—
But I'm too old for kitten, you know;
Now just try me on cat!"

"I like the man who faces what he must,

Who fights the daily battle without fear;
Sees his hopes fail, yet keeps unfaltering trust
That God is God; that somehow, true and just,
His plans work out for mortals."

	GRADE I.*	GRADE II.*	GRADE III.*	GRADE IV.	GRADE V.	GRADE VI.	GRADE VII.	GRADE VIII.	HIGH SCHOOL.
Sept.	Activities of the child. Body as a whole.	Cigarettes. Effects on growth and health.	External parts of the body.	Skin and cleanliness.	Heart and circulation.	Review fifth year work, particularly the special senses.	Fermentation.	Review seventh year work, especially the heart and circulation.	Bodily control.
Oct.	Parts used in work and play: arms, hands, fingers.	Wholesome and unwholesome drinks.	Bones and joints. Teeth.	Lungs and breathing.	Alcoholic drinks.		Alcoholic drinks.		Bodily support.
Nov.	Parts used in running, walking, etc.: legs, feet, toes.	Senses of touch and smell.	Muscles.	Brain and nerves.	Growth and repair.	Skin and cleanliness.	Cell life and growth.	Bones.	Bodily motion.
Dec.	Parts used in finding out things: five senses.	Senses of sight and hearing.	Food: what becomes of it. Alcoholic drinks.	Bones and joints	Secretion.	Organs of excretion.	Organs of the body.	Muscles.	Food and digestion.
Jan.	Parts used in living: head, trunk.	Food. Table manners.	Heart and blood.	Muscles.	Food and digestion.	Respiratory system.	Bodily training.	Nervous system.	Secretion and excretion.
Feb.	Needs of the body externally: shelter, clothing.	Voice: use, care and training. Teeth.	Pure air and breathing.	Food and digestion.	Assimilation.	Brain and nerves.	Food.	Tobacco.	Skin and cleanliness.
Mar.	Needs of the body internally: food, drink. Why not alcoholic drinks and cigarettes?	Skin and sense of touch.	Brain and nerves.	Alcoholic drinks. Tobacco.	Special senses.	Sympathetic system.	Digestion.	Excretion.	Tobacco and physical training.
Apr.	Care of body: cleanliness.	Body as a whole: its needs, care.	Skin and cleanliness. Special senses.	Heart and blood.	Tobacco.	Bones.	Assimilation.	Organs of Respiration.	Fermentation.
May	Care of body: right position.	Review of the senses.	Cigarettes.	Special senses.	Physical exercises.	Muscles.	Secretion.	Skin and cleanliness.	Organs of the body.
June	Review.	Review the body and its needs.	Review.	Review.	Review.	Review.	Review.	Review.	Review.

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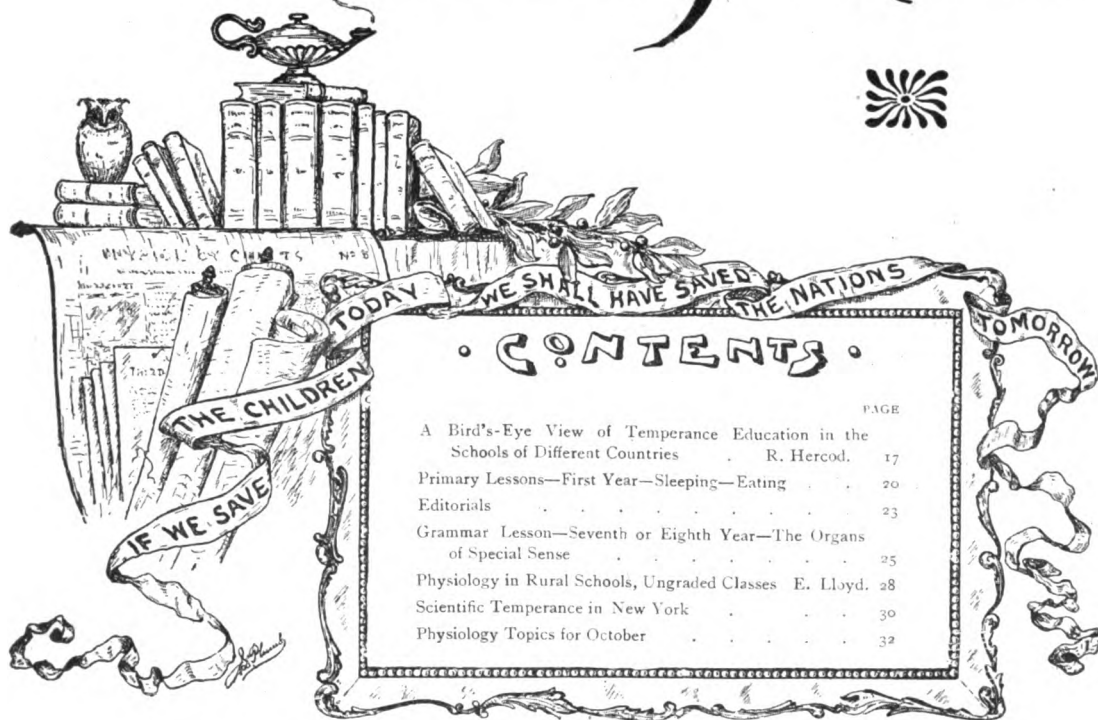
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PHYSIOLOGY TOPICS FOR OCTOBER

PRIMARY—Parts of the Body used in Work and Play: Arms, Hands, Fingers; Uses, Needs, Care. Wholesome and Unwholesome Drinks. Bores and Joints. Teeth.

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School Physiology Journal

Vol. XII

BOSTON, OCTOBER, 1902

No. 2

AUTUMN'S BANNER

'TIS a banner of gold and scarlet
October flings to the breeze,
And none other of all the twelve months
Can boast such colors as these.

For the trees that through all the summer
Have been dressed in the darkest green,
Now hanging with red and yellow
In most gorgeous gowns are seen.

The goldenrod flames by the roadside
And over the fences old,
Till each meadow is fast becoming
The Field of the Cloth of Gold.

And even the sun in his setting,
When he slowly sinks from view
And looks over the world of color,
Has caught the golden hue.

A. S.

A BIRDS-EYE VIEW OF TEMPERANCE EDUCATION IN THE SCHOOLS OF DIFFERENT COUNTRIES

YOU will permit me to lay down the proposition, without delaying to prove the truth of my assertion, that alcoholism is a formidable social evil, and that as such it ought to be combated. It is in any case one of the plagues of civilization. I need only remind you that ten per cent of men above twenty years of age in Switzerland die of alcoholism; the situation in France or Germany is not more encouraging.

It must therefore be combated; but how? To answer that question one must study its causes in the light of the old adage: *Tolle causam, tollitur effectus*. One of the causes is unquestionably the general ignorance of the public concerning the true effects of alcohol. Deceiving by false appearances, alcohol is represented as a panacea, warming, strengthening, an aid to digestion, a necessity to all normal existence, a promoter of sociability. The truth revealed by exact scientific researches of the last thirty years is almost unknown by the people. Old prejudices which flatter and justify indulgence are tenacious. After thirty years of age, one goes his own little way, pursuing the path already begun, a slave of custom and of habit. This incontestible psychological truth explains the small success—comparatively—of temperance

societies. They ask the adult to abandon cherished habits the yoke of which is often too heavy to be thrown off.

But could not the children unweighted by previous habits be reached with more success? Shall they be thrown out into life from the school without being told that drink is the cause of many ills and lamentable shipwrecks of life? Certainly not, because the school is not only a workshop where one painfully drives into childish heads the rules of grammar or geographical names; its mission is higher. The school must prepare the child for life, fortify him in advance against the temptations which await him, make him a good citizen with a sound heart, a strong body, and an open intelligence.

Educator of the rising generation, the school will combat alcoholism by showing the child the truth which the dull joys of alcohol mask. Several great nations have grasped this fact, the United States, Canada, Belgium, France and others.

The United States presents the most striking example. As given in all the public schools of the republic, the anti-alcohol instruction is connected with that in physiology and hygiene. In this respect America differs from other countries, notably France, where the anti-alcohol teaching is occasional and is given in connection with arithmetic, reading or composition lessons, as well as in a course of natural sciences or of hygiene. Although the French system, at first glance, seems more natural, since the alcohol question is economic and moral as well as physiological, the American plan has the advantage of requiring the teacher to give regular and easily controlled temperance teaching.

What are the appreciable results of this instruction in the United States? Certainly some years will pass before the teaching bears its full fruit. Let us wait until the children of today have become men. Let us wait also until young teachers trained to estimate alcohol at its just—non-value—replace those of their older colleagues who yet believe, and will always sincerely believe, in the benefits of alcoholic drinks. For anti-alcohol teaching to secure all that it is possible to attain by means of it, it is essential that those entrusted with it perform their work heartily, not separating practice from principle, but giving their pupils the good example of a life of sobriety. Do what I say, do also as I do!

Beside her powerful neighbor, though less strikingly, Canada is doing excellent work in this direction. A legislative act, in 1885, placed

temperance instruction in all public schools in Ontario. The subject must be treated like other regular branches, with the aid of suitable books. Care is taken that the temperance lessons have a strictly scientific character. No sentimental effusions, no descriptions of darkest hue in which the drunkard beats his wife and abuses his children. The teacher is required to teach accurately and soberly certain effects of alcoholic drinks, to show the danger of these drinks even when taken in small quantities, the power of habit, and the natural effects of a paralyzant and a narcotic like alcohol. A special examination on temperance hygiene is required of candidates for the high schools. In the normal schools also, the instruction has an important place.* Moreover, the Canadian people require of the teachers of their young people the strictest sobriety. The teacher who is suspected, not of being a drunkard, but of having too much affection for the bottle would have great difficulty in securing a position.

The condition in England is quite different. In the United States the laws require temperance instruction. This system would be impossible in England where the school organization is still very lax. There, private initiative takes the place of the intervention of the state. The burden of the effort for anti-alcoholic teaching is borne by the United Kingdom Band of Hope. According to the last report of the acting secretary of the Band of Hope Union, 3,500,000 children are connected with that society.

The disadvantage of trying thus to gather children into small groups of abstainers is that only the minority is thus reached. To be effective, the instruction must be given to *all* children in the schools. Our friends in the Band of Hope understand this and, in 1877, commenced regular lectures in the schools of London. Their success warranted the extension of this effort throughout the country. Resources for carrying on the work having increased in proportion to the needs, seventeen lecturers are now in the service of the Band of Hope. They go from school to school, nearly everywhere well received and listened to with attention. By June, 1900, in eleven years, 34,617 lectures have been given before 3,838,525 scholars and 127,027 teachers. The lecturers to encourage their young hearers ask them to make a résumé in writing of what they remember. The authors of the best reports receive prizes or certificates.

I have some fear that the English system is insufficient. One or two occasional lectures by unknown speakers will not create in the

minds of the children a lasting conviction. The scheme seems to me a makeshift which ought to make way as soon as possible for regular instruction given by the regular teacher. In the meantime, it goes without saying that the makeshift is useful, and it is a case where may be applied the pretty English proverb: A bird in the hand is worth two in the bush.

Two countries of the Latin race, Belgium and France, have recently introduced anti-alcohol teaching in their public schools. In Belgium, in the first two years, the teacher gives the children familiar talks upon water, aromatic drinks, etc., without touching the subject of alcohol. The two following years they begin the study of fermented and distilled drinks. The teacher exposes and combats the prejudices which prevail on this subject, and describes the real effect of the drinks on the human system. Together with this instruction lessons in hygiene are given, the teacher giving the pupils problems, dictation exercises and reading selections which treat of alcoholism. In the higher grades of primary schools the teacher speaks of alcoholism not alone as affecting the individual but in its social aspects, of its causes, and treatment.

In general, the instruction is really given in the majority of primary public schools. However, the political power of the liquor-sellers who control affairs in certain communities is a damper to the zeal of the teacher. The instruction has also a place in normal schools. But the course of study there is deficient and consequently ineffective. In secondary and higher schools, there is nothing more as yet than timid attempts, although leading Belgian professors are favorable to a moderate anti-alcohol reform.

It is difficult to find out exactly the value of the instruction in Belgium. Let us rather confine our attention to the fundamental difference between the Belgian system and those which we have previously studied. Belgium is opposed to spirits only, especially to gin. Toward the fermented drinks she shows a very friendly neutrality. It appears to us that to pledge the children not to drink gin is a useless endeavor to surmount the obstacle. It must be said in partial defense of Belgium, that gin is the most dangerous drink there, that even the children use it. On the other hand, the only fermented drink which the working people know is a light beer containing about two per cent of alcohol.

Nevertheless, in Belgium even, voices of authority are raised against the use of beer which forms, to say the least, an economic waste even if the Belgian beer is harmless. It appears to us that the school ought to teach the child that beer, so far from being a substance of prime necessity, is an article of luxury, and that he should use for better food the money

*The report of the Canadian Minister of Education for 1901 says, "It is worthy of notice that the number of pupils receiving instruction in temperance and hygiene has increased from 33,926 in 1884, to 199,229 in 1900.

that every household devotes to the purchase of beer.

In France, the program of anti-alcohol teaching is similar to that in Belgium.

As in that country, and possibly even more, the instruction is directed exclusively against distilled and aperient drinks. The fermented drinks enjoy a large degree of tolerance, too large, it seems to the writer. It is contrary to fact absolutely to separate fermented and distilled drinks. Both kinds contain alcohol. The intensity of their effects varies, since alcohol is considerably diluted in wine and especially in beer. I consider it equally dangerous to recommend as agreeable and stimulating wine, either pure or diluted with water. Let us remember that we are teaching children, and that the natural drink of the child—I would gladly add of adults—is water.

As to results, naturally this is not the time to estimate them, but ten or fifteen years hence when the children of today become citizens. However, some teachers notice a change for the better among the parents of their pupils. The child says at home: "Absinthe is a poison," and the father hesitates thereafter to take it.

Moreover, official initiative has encouraged many teachers who, in view of the hostility of local authorities, of the mayor, of tena liquor-seller, did not before dare to engage actively in the struggle against alcoholism.

In Denmark, the government recently sent to all teachers a book of temperance readings compiled by the Danish society of abstaining teachers, urging them to use it in their lessons.

In Holland, the Dutch society of abstaining teachers desires to delay the introduction of temperance teaching until, by the progress of public opinion, they can attack with more decision than they now know how to use alcoholic drinks even of the fermented class. The government allows the teacher full liberty of action in this respect.

To sum up the conclusions which the experience of three countries furnishes us :

1. In a general way in all countries where the alcohol question is under consideration, it is believed that the school can and should fight against this evil.

2. The countries are divided upon the mode of procedure. Some put upon the state the care of introducing the instruction into the schools (America, Canada, France, Belgium), others prefer to have recourse to private initiative and ask only the friendly tolerance of the state (England). In other countries, like Holland, the middle classes interested are in favor of official temperance teaching, but they are waiting for its introduction and content themselves with a *laissez faire* policy in order to be sure later of securing the radical instruction which alone appears to them to be suitable for their country.

3. There are radical differences in the nature of the instruction. The

United States, Canada and England, where the temperance movement after bitter experience has taken total abstinence as its basis, quite naturally wish the school to present to the child total abstinence as the ideal. In France and Belgium, on the other hand, distilled drinks only are op-

posed, which, rightly or wrongly, are considered responsible for all the evil.

4. The anti-alcohol instruction being everywhere recently introduced, it is difficult to speak with any precision of its results. It will ever be but one of the forces which will combine in the battle against alcoholism. Hence it will always be impossible to single it out and indicate to what degree it has contributed to the diminution of alcoholism. Nevertheless, it seems evident that wherever serious anti-alcohol teaching is given, the results ought to be excellent and the difficulties none, on condition that the teacher entrusted with this teaching uses tact and knows how to teach without offending.

R. HERCOT in *Journal de la Societe vaudoise d'Utilite publique*.

Translated for the School Physiology Journal.



"Where the yellow sunshine sheen
Falls faint on flowers that bloom and fade,
The mighty trees between."



Primary Lessons

FIRST YEAR

SLEEPING

A CHARGE often brought against our primary and secondary schools is that they seek to develop the child's mind at the expense of his body. In some cases this may be true, but more frequently it is the faulty conditions of the child's home life rather than those of the school which sap his vitality and prevent full physical development.

It ought to go without saying that school children, especially those in the lower grades, should have abundance of sleep in the early part of the night, but the facts too often tell another story. The little ones are allowed to continue their play until so late an hour that they go to bed feverish and excited, in no condition to get the rest they need.

Teachers, as a rule, are quicker than parents to know when such conditions prevail, because they see the results in the child's school work. For this reason, suggestions as to a remedy should also come through the school.

Get the children interested in studying the habits of native birds and animals, letting them find out for themselves when these go to bed and get up, and how their way of resting differs from that of people. Talk with them about the need of rest; why all living things must have plenty of sleep, the best time to get it, and how it is just as necessary as play and work to make everything grow. Set them hunting for flowers which close when it begins to grow dark, to open again at sunrise.

Explain that people have a much more important work to do than any plant or animal, and must take at least as good care as these do to get plenty of sleep. Little people have to grow as well as work, so it is even more necessary for them to go to bed early. Settle on a regular time for the children under your care to go to bed and to get up, and try to get their co-operation in the matter. Ten hours is none too much sleep for children in these grades, and they can be so led to feel the importance of the matter as to be willing to curtail their play to this end.

Tell them how to arrange their windows to

have plenty of pure air during the night, and how to air their beds and leave their rooms in the morning. If any of them find a bird's nest next spring, ask them to watch how clean this is kept as long as the birds stay in it.

Nothing is so easy to arouse as the enthusiasm of a little child, and it is in every teacher's power to turn this natural interest in the right direction.

READING LESSON

What a fine flock of sheep !*

All but two of them are lying down.

They have had their supper and are going to sleep.

Old Ned will not sleep. He is wide awake to see that nothing harms them.

He is a fine dog. When he takes the sheep home his master will give him a good breakfast. Then he will have a long nap.

Night is the best time to sleep, but Ned has to work at night. He sleeps in the daytime.

CLASS TALK

Make it a universal rule to ask of the children only such questions as will stimulate thought and help them to express their own ideas.

What time of day is it in this picture? How do we know? Why do sheep need to rest? What other animals go to sleep? What is the dog doing in this picture? When will he sleep? How many of you have pet dogs at home? Tell some of the things they do to make them tired at night. Where is your dog's bed? How is it different from yours?

OBSERVATION WORK

Let each child choose some form of animal life, a bird, insect, cat, dog, horse, anything within the range of his observation, and find when and where it goes to sleep. Does it sleep standing up, sitting or lying down? What does it do during the day to get tired?

Ask the children to think of and name animals which sleep in the daytime and are wide awake at night. Explain the reason for this, *i. e.* because the food which such animals live on can more easily be found then, or because they can see to hunt better at night, etc.

Have all in the class remember the different things they do during a single day and report on them. What kinds of work and play make the legs tired? the arms? the head? the back? How do these parts get rested again?

ACTION SONG

- (1) The lambs are asleep in the fold,
- (2) The birds asleep in their nest,
- (3) And now comes the call for little ones all
- (4) Like them to take a rest.

*See picture on page 29

- (5) Birds sleep in the treetops high,
- (6) And lambs on the meadows wide,
- (7) While fish take a nap on a big white-cap
- (8) Far out on the ocean tide.
- (9) But when my sleepy time comes—
- (10) To rest my tired head—
- (11) There is naught to compare, I do declare,
- (12) With this, my own little bed.

(1) Close fingers. (2) Fingers interlaced, hands cup-shaped to form a nest. (3) Point to children in turn. (4) Close eyes. (5) Raise arms above the head. (6) Stretch arms out in front to form a circle with fingers interlaced. (7) Sway arms back and forth. (8) Stretch arms out at sides. (9) Point to self. (10) Point to head. (11) Shake head slowly. (12) Fingers interlaced, hands flat.

Give the children a few simple directions about the best way to sleep. We should go to sleep in the dark just as the birds do. We can not be out of doors all night like them, so we must do the next best thing, open the windows to give the pure outdoor air a chance to get to us. The sun shines into the birds' nests all day long. We must let it into our beds and bedrooms to make them also sweet and fresh. Animals go to bed early and get up with the sun. That is a good rule for us.

EATING

ONE of the strongest arguments for giving children their meals by themselves is that they can not then be tempted to eat anything and everything of which their elders may partake.

The child's digestive apparatus is a most delicate and sensitive piece of mechanism. If it is tampered with, the man may reap the results in indigestion and dyspepsia.

Begin in the lowest primary grades to teach the little ones what foods are best for them, and what should be avoided until they are grown

up. They probably know already that the farmer does not give his colts the same kind of food as he does his horses, and they can readily understand that it is even more important for children to have foods that can easily be made into bone and muscle.

Tell them some of the best foods for little people—such as whole wheat bread and milk, eggs, fresh ripe fruits and vegetables, well cooked cereals with milk but no sugar. It will not be long before these facts, learned at school, will be repeated in the home to the improvement of faulty conditions.

The question of sweets will come up over and over again. Do not forbid them entirely; the universal craving of the child nature for these things shows that a real need of them exists. Instead, tell them when and how to eat sweets, why not between meals, or all the time, and

why only in moderate quantities. Explain what is meant by self-control, and show that here and now is a way for even little people to practice it.

READING LESSON

This mamma has three children. She calls them her little birds.*

It is supper time and they

are hungry.

They have been playing and working all day long.

Now they sit in the doorway and mamma feeds them bread and milk.

This will give them rosy cheeks and keep them well.

They do not eat pie or cake or any rich food, because it might make them sick.

What shall we eat if we want to grow tall and large and strong?

CLASS TALK

Ask the children what they had for breakfast this morning; for dinner; for supper last night. Where do our foods come from? What foods grow all ready for us? Name other foods that must be cooked before being eaten.

What food plants have you seen growing?



"Nothing ever tasted quite so good as that first Alice"

*See picture on page 27

Name something good to eat that grows on a tree; on a bush; a food plant that has a head; another that has ears.

Tell what a cow likes to eat; a robin; a dog; a mouse; a bee; a squirrel. What do you like best to eat?

Talk about the food of young animals, kittens, calves, lambs, babies, and help the children to see how this differs from that of grown animals and people. The farmer does not make his colt do the work of an old horse because it is not strong enough, neither does he give it the same kind of food. Why not? Why do babies have only milk for their food? Why do children need other things to eat? Why would it not be a good thing for them to eat everything that grown people do?

Name foods that are good for children, that will help them grow and give them strong, healthy bodies. Name foods that would be likely to hurt them and perhaps make them ill.

ACTION STORIES

Such kindergarten games as "How the Corn Grows," "The Mill," and "Making Bread," described in Poulsson's "Finger Plays," will prove equally fascinating to children in the first grade, especially to those who have not had kindergarten training. In addition, let them act out the story of

THE LITTLE WHITE BANTAMS

Two little children lived out in the country on a farm. Harry was so tall (arm stretched out at side), and Alice was a little shorter (lower hand a few inches). One day Papa brought home two little bantams (hands closed, thumbs and little fingers raised), one for each of them (raise forefingers).

Papa built a little house for them (fingertips together like slanting roof), and a yard outside for them to play in (arms stretched out, hands clasped). Harry and Alice brought soft straw and made a nest in the little house (hands cup-shaped).

Every morning and night they carried the bantams something to eat and fresh water to drink. Soon the bantams were so tame that they would eat out of the children's hands. (Tap palm of left hand with forefinger of the right).

One day there was a little white egg in the nest. (Thumb and finger of left hand together in circle.) The next day there was another, (circle with right thumb and finger), and Harry and Alice each had a nice fresh egg for breakfast.

CLASS TALK

Children are extremely likely to overeat if they are particularly fond of any article of food,

and to refuse everything else in order to gratify this appetite.

Draw on the board a picture of the stomach, or make a bag of the proper size and show how little it really holds. If this is crowded with food, it can not take care of it properly, or get it ready to make good bone and muscle.

Emphasize also the fact that eating too much of any food often makes people so sick of it that it never tastes good to them again. A story will help to fasten this idea, and put them on their guard.

TOO MUCH QUINCE PRESERVE

Ruth and Ray were very fond of preserved quinces, always begging for more with their luncheon.

"It is too rich," Mamma used to tell them, "it would make you sick."

"Oh, no, it wouldn't," they pleaded. "We could eat all there is in the big jar, and then want more."

One morning Mamma was ill. "You will have to put up your own lunch today," she told the children. "You know where everything is."

Away they ran in high glee. It would be such fun to get just what they liked.

"For once we'll have enough quince," they said. They made four large sandwiches apiece, spreading each thickly with preserves, and nearly filled a teacup besides.

They could hardly wait till recess, but at last the time came and they sat down under the bushes to enjoy the feast.

Nothing ever tasted quite so good as that first slice. The second was good too, but somehow they weren't quite so eager for it.

They began on the third, but it was getting hard work, and there was still another slice apiece, besides the cupful.

"I don't believe we got the right jar," said Ray after awhile. It doesn't taste a bit like what we had yesterday. Let's throw the rest away. It might make us sick."

"Who wants to bring me the quince jar?" said Mamma the next morning.

Ray and Ruth sat very still. "I don't believe we want any quince today," they said, after a long while, and when Mamma looked into the jar she knew the reason why.

Ruth and Ray are grown up now, but neither of them can bear the taste or smell of preserved quinces. Who knows the reason?

"The common problem—your's, mine, everyone's—

Is not to fancy what were fair in life,
Provided it could be, but find first
What may be, then find how to make it fair
Up to our means."

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OCTOBER

The month of carnival of all the year,
When nature lets the wild earth go its way
And spend whole seasons on a single day.
The spring-time holds her white and purple dear;
October, lavish, flaunts them far and near.

—HELEN HUNT JACKSON.

AN INTERESTING REPORT

IN 1895, the temperance committees of the churches and representatives of various philanthropic organizations and other influential citizens of New York united with the State Woman's Christian Temperance Union under the name of the New York State Central Committee for Scientific Temperance Instruction in the Public Schools, their object being to secure the present law requiring instruction in temperance physiology in the schools of that state. This committee never disbanded and has recently reorganized to protect the law it secured.

This year, the Committee has been making an extended study of the practical workings and results of this law throughout the state, as well as of the criticisms made by the State Science Teachers' Association at its annual meeting in Syracuse last December. From this study the Committee has prepared and published in pamphlet form a very interesting report.

It calls attention to the fact that the Science Teachers' Association, in charging that the indorsed text-books used in the public schools are out of harmony with the instruction in medical colleges in teaching that alcohol is a poison, did not produce a single authority showing that alcohol is *not* a poison. The report of the State Central Committee, on the contrary, cites the authority of medical university teachers and medical journals in support of the teaching of the school text-books on that point.

The Science Teachers' Association implied in its report that alcoholic drinks may be used in safety with meals and after the day's work is done, by people over twenty-one years of age.

"This," says the State Central Committee, "is a specious plea for moderate drinking, with the qualification that youths abstain before they are twenty-one. Such an argument is dangerous, fallacious, and unsustained by science and experience." It ignores the fact that alcohol, like other narcotics, when taken in any degree of continuity even in moderate amounts or in the form of diluted spirits, has the power to create the uncontrollable and destructive appetite for more, thus proving conclusively that there is no limit of safety even in the moderate use of alcoholic drinks.

The Science Teachers' Association based its conclusions as to the results of this teaching in the public schools of New York upon information sought from a comparatively limited number of superintendents and principals of schools and normal school pupils in New York, and from high school teachers, college and medical school professors in New England as well as New York. Naturally, the question is asked, "Why the Science Teachers' Association felt it necessary to consult *New England* educators as to the practical working of a law concerning New York public schools."

The Science Teachers' Association concluded that the study is producing few or no marked results. Even if this conclusion were true, it would be no reason for making more lax the legal requirements for its pursuit, because, as Professor Hercod points out in his article elsewhere in this number, time is necessary for the teaching to bear its full fruit, and the temperance education laws have been in force for comparatively few years. The State Central Committee, however, sought information on this point from those nearest the children and therefore those best qualified to judge of the effects of the teaching; namely, their parents, and the replies received from every county of the state, except Hamilton, extracts from which are given in the published report and are reproduced in part on page 30 of this issue, afford overwhelming proof that this instruction is producing marked results in the lives and homes of the young people of the Empire State for total abstinence and in the better observance of all hygienic laws. It may be noted in passing that the State Science Teachers' Association in its report made no reference to the fact that, by the provisions of the New York temperance education law, four-fifths of the instruction is to be on the subject of physiology and general hygiene and only one-fifth temperance matter, but criticised the law and its workings as if the temperance teachings were all that was included.

The reports received by the State Central Committee also show that all praise is due for the excellent work already done in this subject

by the great majority of teachers in that state, in spite of the opposition from sources from which help should have been received.

The State Central Committee vigorously opposes any suggestions of change in the present New York temperance education law. It says of the recently modified law of Connecticut, which the Science Teachers' Association "regards with favor," that no such law would be tolerated by the people of New York, because it makes no adequate legal provision for this study in the lower grades where alone a majority of the pupils in the public schools can be reached, and because it does not require the necessary help of books for pupils, or make such provision for the study of physiology as is necessary to an intelligent understanding of hygiene, while its enforcement by penalty remains optional with the State Comptroller.

In its turn, the State Central Committee recommends:

1. Cessation of *destructive* criticism of the law and the instruction it requires, by school authorities whose duty it is to enforce the law.
2. A sincere, conscientious and earnest endeavor on the part of normal school principals, institute instructors and teachers to carry out the provisions of the law in a *constructive* spirit, to fit themselves to make the subject interesting, and to present it, properly graded, in such a way as to inculcate the principles of hygiene in the lives of the youth of the state and make them intelligent total abstainers.
3. The appointment of institute instructors who have made a study of physiology and hygiene, as required by law, and who will apply to this subject up-to-date methods of teaching.
4. Preparation by superintendents of schools and school officials of suitable courses of study which shall name text-books and supplementary helps adapted to each grade.

OCTOBER'S GIFTS

October is the month that seems
All woven with midsummer dreams;
She brings for us the golden days
That fill the air with smoky haze;
She brings for us the lisp'ing breeze
And wakes the gossip in the trees,
Who whisper near the vacant nest
Forsaken by its feathered guest.
Now half the birds forget to sing,
And half of them have taken wing,
Before their pathway shall be lost
Beneath the gossamer of frost;
Now one by one the gay leaves fly
Zig-zag across the yellow sky;

They rustle here and flutter there,
Until the bough hangs chill and bare.
What joy for us--what happiness!

—FRANK DEMPSTER SHERMAN—

AUTUMN

When Jack Frost with brush in hand
Wanders gaily o'er the land,
Scattering colors here and there and everywhere,
When the maples overhead
Glow with russet, gold and red,
It is autumn.

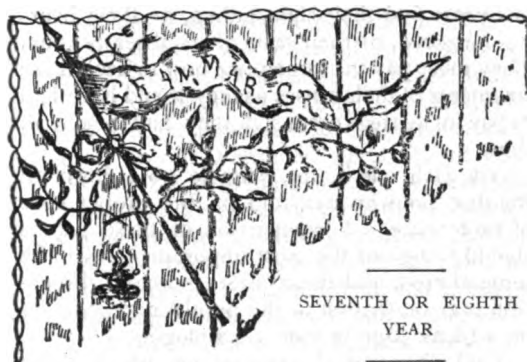
When the orchard's weighted down,
With the apples red and brown,
And the purple clusters hang upon the vine;
When the yellow, tasseled corn,
To the granary is borne,
It is autumn.

When from out the beech trees tall,
Wealth of ripened beechnuts fall,
And the chestnut opens wide his prickly burr;
When the woodbines blush and glow,
And the sunset's splendors show,
It is autumn.

—FANNY FERNALD PAINTER—

The analysis by Professor Hercod, in another column, of the systems and progress of temperance education in the schools of different countries will be of special interest to our readers. In view of his expressed regret that no definite estimate can yet be made of the results of this study over any extended section, either in the United States or in any other country, the evidence of definite results quoted from the report of the New York State Central Committee on pages 30-31 is particularly timely. New York with its area of 53,000 square miles and its population of more than seven millions of people may fairly be called an extended section of the United States over which to search for results.

Just now when the question of the necessity of this study in the lower grades and of the use of books on this subject by pupils using books in other branches is before the public, this testimony from New York is very opportune, and we commend it, as well as the entire report, to the careful consideration of all our readers.



THE ORGANS OF SPECIAL SENSE

SO keen were the senses of our savage ancestors that they could follow the trail by the scent, match the bird's power of vision, or hear sounds inaudible to the civilized ear.

Men might have been able to do the same today had they continued to lead a similar life, but the telescope was invented with which they could see farther than with the sharpest eyes, and the telephone by which more remote sounds could be heard than by the quickest ears. Other inventions did their part, and in proportion as man ceased to depend upon his senses their acuteness left him.

By sense-training nowadays we do not mean efforts to regain all that has been lost. The savage had only a few things to see and he saw them with a minuteness which will never again be equaled. We move among a multiplicity of interests all of which it is an impossibility to examine or know thoroughly. Three things are necessary in consequence. First, to decide which are the important things for each of us to know; second, to train the mind through the senses to perceive these central facts clearly, no matter how buried they may be in unimportant details; third, to translate into useful action what has been thus perceived. Such is the modern idea of sense-training, and the following scheme for a development lesson on this topic is presented with these ends in view.

WORK TO BE DONE BY THE SENSES

Imagine a prisoner shut up in a dark dungeon in which he could neither see nor hear nor use any of his other senses. How much could he know of what was going on in the world outside?

How is the brain such a prisoner? In what ways does it get all its knowledge of the outer world?

Begin the study of the special senses with pupils of these grades by briefly considering how many things there are in the neighborhood of all of us of which the brain has little or no

knowledge. Starting with the schoolroom itself, call attention to the materials used in its making. What kinds of wood were needed? Where did each come from? Why were these particular kinds selected instead of others? How were the nails made which fasten the boards together? Where is iron produced?

Similar questions regarding the glass of which the windows are made, the plaster, paint, varnish, pictures and furniture will show that there is far more in this one room than can be taken in by the senses in several days, hence a selection must be made of the important things.

To decide this point wisely, one must think why he is in school, and use his senses to accord with that end. In class, for instance, one's business is to hear what is being said. He will fail to do this if he is listening to the birds singing outside, or waiting for the bell to ring for dismissal. At his seat, the pupil's business is to study his lessons, not to watch what others are doing.

Draw similar illustrations from different lines of business, and also from play. What special senses is a watchmaker called on to use? a farmer? a cook? a bookkeeper? a ball-player? How are the senses to be used in each case? How are they not to be used?

Let the class try to do any two things at once, then the same two things separately. Time them in both instances in order to show which way is quicker and better. Finally, see that all get the important thought that since there are more things around us than any one can possibly take in through his senses at any one time, each must decide what is most important and put all his attention for the time being on that particular thing.

ADAPTATION TO THEIR WORK

No one can get the best results from a machine unless he knows something of its structure, how the different parts are put together, and how to use it. This is true of a bicycle or a watch, and it is just as true of the special senses. To get the most good out of these organs, one must know how each works and the kind of care it needs to keep it in prime condition.

Take up each of the senses with this thought in mind, beginning, let us say, with touch. Where is this sense? How do you know it is not in the outer layer of the skin? Where else in the body is it not found? Give reasons for its absence in those parts.

Draw on the board a vertical section of skin, showing the nerve cells. Explain why these are so close together, and how every sensation felt by them gets to the brain. Have the class reproduce this diagram from memory, and give a similar explanation of this function of the skin.

Consider which of the other senses are forms of touch. How is taste more specialized than touch? Give a reason. Find what is necessary in order that any substance may be tasted. Have the class examine the tongue in the looking-glass and then get from their books an explanation of everything they see on its surface.

Find whether salt, sugar, and other substances of decided flavor can be tasted equally well by all parts of the tongue. What substances have no taste? Why? Trace the course of the nerves of taste from the tongue to the brain.

When we touch or taste anything it comes into actual contact with the senses, but we can smell a rose when it is some distance away from us. How is this possible? Let the class exhaust their own ingenuity over the question, then, if necessary, explain that odors are due to very tiny particles of matter which are given off by objects. These are carried through the air to the nose.

The eye and ear are still more highly developed, because nothing that is seen or heard touches these organs themselves. In the first case, a picture of every object looked at is formed on the retina. In the second case, the air is thrown into vibrations by sound just as water is when a stone is thrown into it. When any of these vibrations strike the ear, we hear the sound.

Have the class study the mechanism of the ear and eye enough to familiarize themselves with the practical working of these organs. They should know the different kinds of material of which each is made, and why more than one kind is needed; the function of each part, and how it is able to fulfil this function; and also be able to show by diagram how the impression of everything seen or heard is carried from the eye or ear to the brain.

IMPORTANCE OF THEIR CARE

Tell the story of the Cumæan Sibyl and her visits to Tarquin the Proud. The first time she came, she brought nine mysterious volumes and offered them to the king at an enormous price. He refused and the Sibyl went away.

Presently she returned with six volumes which she offered at the same price as before. Again the king refused. A third time she came, with only three volumes now, but the price was still the same. By this time, the king was convinced of their value and was glad to pay the original price for even a third of what he might have had at first.

We see very old people occasionally who have kept almost the perfect use of their senses. They paid the price of good care of these precious organs at the very beginning. Other people neglect their senses or abuse them, and in a

few years find their sight failing, or their hearing impaired, or their taste or smell nearly gone. They must pay the same price now to keep these fragments of their senses as they would have had to pay for perfect organs if they had begun in time.

Ask each one in the class to note down all the directions he can find on the proper care of each sense. A comparison of these papers should bring out the most important facts to be remembered, and these after thorough discussion may be written in the pupils' notebooks or on a blank page in their physiologies.

Find the special temptations which beset your pupils in regard to the care of the senses, and delicately but firmly combat them. One which is almost sure to exist will be the use of cigarettes. Have the class find which of the senses are injured by cigarettes and how seriously. Make it clear to them that the entire abandonment of this habit is a part of the price they must pay for perfect sight, and if they do not pay it now they may have to later to keep even part of this sense.

Study with the class the effects of alcohol on the senses as found in their books, in the quotations in this JOURNAL, and elsewhere, making it clear why cider and beer may produce just as bad effects as stronger liquors, if taken often enough.

AUTHORITATIVE QUOTATIONS

EFFECTS OF ALCOHOL ON STRUCTURE OF THE SPECIAL SENSES

Without doubt the protoplasmic nerve cells of the organs of special sense are as sensibly affected by alcohol as the cells of any other tissues of the body. Consequently the effect of minute quantities of alcohol on both vegetable and animal cells is a strong argument that it injures the constructive protoplasm and favors the destructive protoplasm of the organs of special sense.—J. W. GROSVENOR, M. D., Buffalo.

Alcoholic liquors, long continued, may cause a congestion of the internal ear and by producing a similar pathologic condition in the throat, set up diseases in the middle ear through the Eustachian tube. Some aurists declare snuff-dipping, tobacco-chewing and smoking may each accomplish the same result through a similar process. Certainly, by exerting a depressing effect upon the nervous system they may increase nerve deafness.—FAVETIE C. EWING, M. D.

EFFECTS OF ALCOHOL ON FUNCTIONS OF THE SPECIAL SENSES

Careful observers have noted, before and after the use of alcohol, the condition of the

senses, and in all cases a diminution in acuteness and activity was observed. While a man may believe that his senses are keener and his powers of endurance greater, careful experiments with instruments of precision have shown that his hearing is reduced, his acuity of vision is lowered, his taste obtunded, his sense of smell blunted, and his sense of strength, as shown by the dynamometer, materially reduced. The combination of ideas is much slower, the pain, heat and touch senses are diminished and weakened by even small doses, as from one to four drams.—A. D. McCONACHIE, M. D., Asst. Surgeon to the Charity Hospital, Baltimore, Md.

Alcohol, tobacco or whatever other drug may be regarded as a toxic agent, or else the toxin that it liberates in the system, may sometimes and, probably, usually affects primarily the fibers of the optic nerve.—*Quarterly Journal of Inebriety*.

Alcohol reduces the power and functional activity of the special senses. The activity of vision is lowered, the power of hearing reduced, the sense of smell blunted, and the taste so obtunded that fiery and even caustic liquids can be swallowed without wincing.—E. STUVER, M. D., Ph. D., Colo.

DEFECTIVE VISION DUE TO ALCOHOL AND TOBACCO

Whilst it is contended by many observers that the use of alcoholic drinks alone rarely produces amblyopia,—defective vision—it must be conceded that there are undoubted cases in every man's practice which can only be ascribed to alcoholic effects. Usually such patients give a history of the use of tobacco and alcohol jointly, and whilst the real cause of the diminution rests with the excessive use of tobacco, the alcohol, by impairing nutrition, has made the tissues less resistant and hence an easy prey for the baneful poisonous effects of the nicotine on the optic nerve. Alcoholic amblyopia manifests itself by a gradual diminution in vision in both eyes, with impairment of central color vision—red

and green being less distinctly seen or even not at all, white also being not detected.—A. D. McCONACHIE, M. D.

ALCOHOL A PARALYZER

The paralyzing action of alcohol has been tested on special nerves and functions. I have found that very small doses of alcohol, such as one or two fluid drachms and upward, diminish the sensibility of touch, of hearing and of sight.—J. J. RIDGE, M. D., London.

TOBACCO AND COLOR BLINDNESS



"Feeding Her Birds"

Habitual cigarette smokers are barred from positions in the operating department of the New York, New Haven and Hartford Railroad. H. A. Ives, who has charge of making the examinations, says:

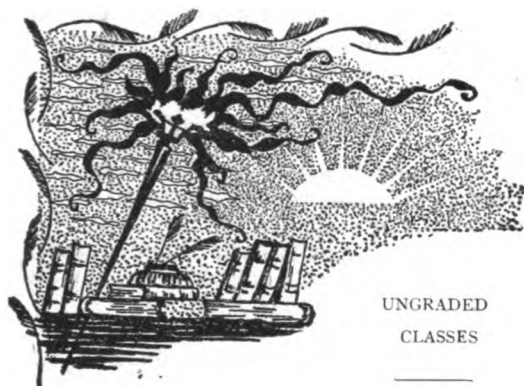
"In signals, the green stands for safety and the red for danger and confusion of these colors has caused many accidents. This test is also a sure indication of whether a man is a cigarette smoker or not. If an applicant is an habitual smoker, he is almost sure to be more or less color blind. The excessive use of liquor is also indicated in this way.

How far the habitual use of tobacco has blunted the sense of smell in the male civilized being is an interesting subject for speculation. It is at any rate a matter of common observation that women have a more acute sense of smell than men.—*Dietetic and Hygienic Gazette*.

JAMAICA GINGER A CAUSE OF BLINDNESS

Cases of Jamaica ginger blindness have been reported. Harlan reports two in which an analysis of the ginger essence was made. It seems that blindness is not only caused by Jamaica ginger essence, but by others, as lemon and peppermint, which are made up with methyl alcohol.—*Journal American Medical Association*.

*See "Eating," page 21



PHYSIOLOGY IN RURAL SCHOOLS

THE teacher of the rural school, with pupils of all grades, has more need than any other to use her time to the best possible advantage, but as a knowledge of the laws of health is of practical value to every pupil throughout his whole life, no matter what his vocation may be, it is clear that hygiene should be well taught, whatever else is omitted.

Before she asks the school authorities to give her more or better books or apparatus, the teacher should use to the best advantage the means that are furnished her, and endeavor to arouse an interest in the school and in her work.

If you are so unfortunate as to have physiologies of but one grade, divide all the pupils who can possibly use this book with profit into two classes, and let one of these classes (composed probably of fifth and sixth year pupils) use the book as a supplementary reader until they have read and discussed one half of it. Then let the advanced class, including the big boys who come only in the winter months, take the books and study the same half thoroughly, reciting three times a week until they have finished it.

In order to make the lessons interesting, you must bring in matter that is not in the text-book, and perform experiments occasionally. Have the heart and lungs brought to school and thoroughly studied at "pig-killing time."

Thenext year, the advanced pupils can finish the book, and the directors by this time will probably be sufficiently interested to put in an intermediate book for the younger pupils. If there is a primary book for fourth year pupils, it may be used as a supplementary reader at the beginning of the school year, then laid aside for a time, and studied as a text-book toward the close of the term. Encourage the pupils in all grades to take the physiologies home, in the hope that the parents will become interested in them.

- All the pupils who are too young to use a text-book may be put in one class for oral lessons, at

least thirty of which should be given during the year. These little folks should have an oral lesson of some kind every day, and hygiene can alternate with elementary geography and forms of nature study.

The oral lessons will not be a success unless you plan your work carefully. They should consist of practical talks, illustrated by pictures and stories, concerning ventilation, bathing, care of the teeth, hair and nails, wholesome food and regular times for eating, how to cool off when hot, etc. As the teacher and most of the pupils bring their lunch with them, the teacher should institute the custom of having all sit down in the schoolroom, or in the shade of the trees, and take time to chew the food well. Games should not be allowed to begin for at least ten minutes after the school is dismissed for the noon intermission.

What shall be taught the little children concerning alcohol? Is it not a mistake to allow their minds to dwell upon such an unpleasant subject? If all the pupils came from homes where total abstinence was the rule, and if we could be sure that they would not be tempted outside, it would perhaps be a mistake to teach primary pupils anything about alcohol; but there are few country neighborhoods where some parent is not a victim of intemperance, or where some little children are not tempted by beer, wine or hard cider.

When you take the children to the woods for a spring ramble, you tell them that certain vines and berries are poisonous and must be avoided. For a similar reason you will teach them that alcohol is dangerous, because a little creates an appetite for more, and you will teach them the names of the drinks that contain alcohol, so that they may not taste them.

At least once a year you should bring a jar of apple juice (or some other fruit juice) to the schoolroom and let the children watch the process of fermentation, telling them about the ferments in the air, and how they turn part of the juice to alcohol.

Even in the country schools there are boys who become victims of the cigarette habit. What lessons can you give them concerning tobacco that will counteract this? Strive to create in the boys a desire to become large, strong men. Tell them that when base-ball and football players are in training they use no tobacco or alcohol. Tell them that business men are looking for boys who do not smoke cigarettes. Tell them their nerves will be steadier, their eyes keener, their breath sweeter, if they do not use tobacco.

When you tell them stories to illustrate this topic let them be about men and boys who have had the courage to abstain from alcohol, or to-

bacco, or both, not pointing the moral too plainly, but allowing them to see that you admire that kind of a man or boy.

If possible, create an anti-tobacco public sentiment in the school. Tell your pupils that you would like to be able to say that not a single boy in your school uses tobacco, and ask how many of them will help you to bring this to pass.

Throw the emphasis upon the blessings of abstinence. Above all, do not reflect upon the habits of parents. If a pupil says that his father drinks or smokes, tell him in reply that when his father was a schoolboy he probably did, not learn about the evil effects of these things; that the world is growing wiser, and that when the boys of today get to be men we expect them to be total abstainers.

—ELIZABETH LLOYD.

A little four-year-old miss was overheard talking to her favorite doll that had accidentally lost an arm, thereby exposing the sawdust. "Oh, you dear, good, obedient dolly! I know I told you to chew your food fine, but I had no idea you would chew it so fine as that."



"The sheep are in the fauld, and a' the kye at hame"

Some say that the age of chivalry is past. The age of chivalry is never past so long as there is a wrong undressed on earth and a man or woman left to say, "I will redress that wrong or spend my life in the attempt." The age of chivalry is never

past so long as men have faith enough in God to say, "God will help me to redress that wrong, or if not me, surely He will help those that come after me. For his eternal will is to overcome evil with good."

—CHARLES KINGSLEY.

LUNCHES FOR SCHOOL CHILDREN

1. Small chicken sandwiches, a piece of cake, an apple.
2. Biscuit sandwiches, a bunch of grapes, one cream-cake.
3. Egg sandwiches, a banana, a slice of gingerbread.
4. Tongue sandwiches, an orange, three or four cookies.
5. Buttered brown and white bread, one boiled egg, a piece of cake, an apple.
6. Nut sandwiches, a piece of raisin bread, one banana.
7. Cheese and egg sandwich, fruit crackers, one orange.

—MRS. LEMCKE.

SELECTION OF FOODS

Children grow pale and sickly from loss of phosphates or lack of phosphates in their foods. The following foods are rich in phosphates: salmon, 6.5 per cent; lobster, 5.5; prunes, 4.5; trout, 4.3; barley, 4.2; corn (southern), 4.1; figs, 3.4; beans, 3.5; oats, 3.0; sweet potatoes, 2.9; chicken, 2.8; white of egg, 2.8; peas, 2.5; veal, 2.3; lamb, 2.2; beef, 2.0; yolk of egg, 2.0 per cent. Beef produces more energy than mutton or lamb; the tenderloin gives less strength than the sirloin, the sirloin less than the rump, and the rump less than the round.

The white meat of chicken and turkey is like white bread, while the dark meats are rich in phosphates and muscle making food. Potatoes have less than 1 per cent of phosphates.—*Baltimore Health Journal.*

The autumn time has come;
On woods that dream of bloom,
And over purpling vines
The low sun fainter shines.

The aster flower is failing,
The hazel's gold is paling;
Yet overhead more near
The eternal stars appear.

—WHITTIER.

SCIENTIFIC TEMPERANCE IN NEW YORK

THE New York State Central Committee* sought for specific information concerning the results of the whole subject of temperance physiology, from those best qualified to judge of its effects upon the children of the state, namely, the parents of the children and the patrons of the schools. Some parents receiving the questions sought additional information from teachers. Thus much testimony was obtained incidentally from those engaged in the actual work of instruction through the various grades. Through the courtesy of the Committee we are permitted to reproduce some of the replies which were printed in their report.

RESULTS OF TEACHING GENERAL HYGIENE

In response to the questions,

"Do the children in your public schools report at home facts of general hygiene learned at school?" and

"Is the teaching influencing the hygienic habits of the children?", parents testify that as a result of this study the children do practice and bring home the truths thus learned. They insist upon proper ventilation of sleeping and living-rooms and tell how to get it. They comment on the danger of drains or pools of stagnant water in cellars, door yards or near wells, and urge the necessity of pure water. The importance of eating slowly and at regular intervals, the proper selection and cooking of food, its adaptation to season, suitable dress, the harmfulness of corsets, the danger of draughts are facts learned at school and put to practical use by the children. They ask for toothbrushes and individual towels, and object to public drinking-cups. They become little rebels against dirt and disorder in the home and help to secure better conditions, are more careful of the eyesight, assume better positions in standing, walking and studying. Teachers comment on the improvement in personal appearance resulting from this study. Mothers say, "Take any other study out of the schools, *but leave this.*"

One mother says: "I have been surprised and delighted with the information the children in my large family have gained in hygiene as well as in temperance in the schools. The work is thorough and real and is influencing the homes." (Cattaraugus Co.)

"I have six children in the public schools who have profited by their instruction in physiology and hygiene. Even if the temperance part was left out, the rest would be absolutely essential. With the temperance instruction it becomes the most important study pursued in the common schools." (Columbia.)

"This teaching is helping some children to observe certain laws of health which their parents do not know about and can not teach them." (Sullivan.)

EFFECTS OF TEMPERANCE TEACHING ON PUPILS

"Not so many boys are learning to smoke and drink as formerly." (Essex.)

"A boy whose father smokes said he 'had intended to smoke when he was a little older, but if tobacco was so injurious he guessed he would let it alone.'" (Suffolk.)

"Several boys were overheard talking. One boy said, 'I want to be a big man who knows something, and if we smoke we won't grow so well, and smoking makes the brain dull. Our teacher said so.'" (Orleans.)

"Some boys who had already formed the cigarette habit have given it up as a result of the teaching." (Chenango.)

"One high school teacher says she certainly thinks this instruction is influencing the children, for there are not so many of the boys who have graduated in the last five years who drink as there were before that time." (Putnam.)

"I asked the teachers whether in their opinion the children are stronger against alcohol and tobacco than they would have been without the teaching, and they all say 'Yes' very decidedly. I have also had much testimony from parents to the same effect." (Franklin.)

"I am almost if not quite an enthusiast in this line of work. During my period of teaching which covers several years (ten or more), only two parents, mothers, have objected to their children receiving such instruction. These were ignorant, and representative of the lowest of the social classes. Parents, if they do not uphold, at least tolerate the teaching, but it is my belief that thoughtful, intelligent parents do believe in it thoroughly. I am expecting much of the mothers of the next generation who are the little girls of today." (Madison.)

"The boys do not now consider it smart to smoke as they did." (Columbia.)

"The children are known to refuse fruit cake and candies containing alcohol." (Onondaga.)

"The formation of the tobacco habit is prevented until children have arrived at an age when they will never form it." (Westchester.)

"During a period of extremely cold weather last winter, D. S. took his fifteen-year old son with him into a box car to care for a horse which was being shipped. His mother, thinking they would suffer from the cold, wished them to take some whiskey with them, but the son positively refused, giving facts concerning the erroneous impression that liquor helps one to withstand cold." (Otsego.)

Cases are given where, as a result of this in-

*See "An Interesting Report," page 23

struction, the habit of cider drinking is noticeably on the decline.

"In one locality where it is plentiful, none of the children in the schools will touch cider." (Wyoming.)

"The habit of cider drinking is being largely done away with." (Schoharie.)

"It is causing many children to give up drinking cider." (Clinton.)

"Whiskey sellers have tried to hire three or four school boys to drink, offering them money, but they steadily refused." (Monroe.)

"Although we have a saloon in our town it has not got one of our boys for some years past, and every method has been resorted to to tempt them." (Saratoga.)

INFLUENCE OF TEMPERANCE TEACHING ON PARENTS

"A visitor among the city poor found a German mother whose children had learned so much about beer at school that they would not drink it. After this had gone on for some time, the father said, 'If our children will not drink beer, we will not have it on the table,' and since that time it has been banished." (New York.)

"A boy of eight years of age convinced his father of the evil effects of tobacco and persuaded him to discontinue its use." (Wayne.)

"V. D. said that since he had learned about the effects of alcoholic drinks, his father had stopped drinking and had not drunk now for four years." (Suffolk.)

"I know of four families who have been saved from drunkenness through the influence of the teachings received in school." (Kings.)

"A little girl became so interested in the study of the evils resulting from alcoholism that night after night she faithfully related to her father the information she had gained in school. Early one morning one of the clergymen was aroused by the door bell. He found the father and the little girl at the door, both asking to sign the pledge. The father for a number of years has been a sober Christian citizen." (Queens.)

INFLUENCE OF TEMPERANCE TEACHING ON THE COMMUNITY

"The parents are being reached for health and temperance through the children as they could not be in any other way." (Tompkins.)

"Our boys understand more about the evil effects of moderate and occasional indulgence in smoking and drinking, and eventually we shall have a generation of parents who will find it harder to sin against light and knowledge than those who being ignorant have accustomed themselves to beer and tobacco." (Ulster.)

"It has raised the moral tone of the place." (Genesee.)

"It is making narcotics something to be feared and the selling of beverage liquors despised." (Steuben.)

"There is a better temperance sentiment among the boys of our village than ten years ago. Many influences have helped to secure it, but this counts one." (Lewis.)

"It is teaching boys and girls correct ways of living, especially those who have no good home training." (Orleans.)

"It is helping fathers and mothers to bring up their children fortified against the temptation to drink." (Suffolk.)

The examples quoted constitute but a mere fraction of the testimony received by this committee from those best qualified to judge, showing that this instruction, contrary to the opinion of the Science Teachers' Association, is producing marked results for total abstinence in the lives and homes of our young people, and that the teaching of physiology and hygiene not only ought to be but is of "great help in the everyday life of the pupil." These results are destined to increase in number and influence as the years go by.

Even if nothing more had been accomplished than is told in the reports in the hands of this committee, which give but a faint idea of the good actually being done throughout the state, the people of New York would have abundant



A brook that sparkles into song,
And fills the woods with light.

reason for gratitude to the law-abiding teachers in our public schools for the faithful, not perfunctory work, most of them have done in teaching this branch, in spite of opposition and hindrances encountered where they should have help.

THE STORY OF ABSTINENCE IN VIENNA

[The recent visit of Dr. Richard Froehlich of Vienna to the International Headquarters of the Scientific Department of the Woman's Christian Temperance Union has renewed interest in the following story of the awakening of Vienna in the matter of abstinence. Dr. Froehlich is assistant professor in the Eye and Ear Clinic of Vienna University. He is also an ardent student of sociology, and to him, together with Dr. Wlassak and Dr. Poech, is due the new school of total abstinence which has arisen in Austria.]

Since July of 1899, Vienna has had an abstinence society. For a much longer time, a small circle of abstaining physicians had striven to establish such a society, but their efforts had met with passive approval at the best and not until the winter of 1899 was there an opportunity to step out energetically before the public gaze. This opportunity came in a novel form, namely, through the sudden and great popularity which overtook a young abstaining physician, Dr. Rudolf Poech, during the days of plague that Vienna lived through in the autumn of 1898.

Most readers will recall the origin of this plague. A servant of the pathological institute, while helping in their experiments the physicians of the Austrian plague expedition recently returned from India, became infected and died. In caring for this man, the physician in charge, Dr. Hermann Mueller, and a man nurse were stricken down also. When these two and a second nurse who was suspected of being infected were placed in an isolated apartment of the epidemic hospital, Dr. Poech of his own accord asked to be given the case, although he was under no obligation to do so. As the youngest member of the plague expedition, he had learned to know the disease in Bombay.

For fifteen days Dr. Poech lived in the isolated apartment, separated from his friends by a grating through which they passed him medicine and food, connected with the world outside by telephone alone. The sick physician and the nurse soon died and he had to bury them himself within the pest quarters. The hospital directors did not omit to lighten the

severe, self-imposed task of the heroic physician by offering him succor in the form of that strongest of liquors, champagne. But to their astonishment, he sent the champagne back to them, stating that he preferred to place his confidence in mineral water and tea. We can not dwell on the consternation which this radical act caused among the hospital authorities.

On being released from quarantine, Dr. Poech found himself the most prominent physician in Vienna, and he at once took advantage of this situation to open a campaign against alcohol. When he announced that he would lecture, his name drew hundreds of hearers who would hardly have come for the subject itself. There are popular educational societies in Vienna which have established the custom of Sunday addresses in the various districts of the city. Through these, Dr. Poech and his friends, Dr. Froehlich and Dr. Wlassak, gained their first public hearing. Soon Dr. Poech was asked to deliver lectures on the question of alcohol before various labor unions, and before long his engagements were more than he could fill. From that time, hardly a week passed when Dr. Poech, Dr. Froehlich and Dr. Wlassak did not receive invitations to speak in some social union.

Finally, the long desired abstinence society of about one hundred and forty members was formed, the "*Verein der Abstinenten*," for frank discussion and debate and the attacking of such social evils as the keeping open of brandy-shops on Sunday. This society has now made its influence felt throughout all the land, and although in Austria "straw fire enthusiasms" are not uncommon, there is great hope that it will continue to accomplish great results in the spreading of abstinence among the laboring classes.—Translated from the *Internationale Monatsschrift zur Bekämpfung der Trinksitten*.

The footsteps of the summer fade
Far through the meadow and the glade,
And Autumn, laughing, brown, and gay,
Comes dancing down the woodland way.
Her russet wand she waves, and lo!
Forest and field and thicket glow
With treasure wondrous and untold,
A flooding tide of fairy gold.

—PRISCILLA LEONARD.

"My son, did you eat the whole of this doughnut?"

Son—"No, sir. I ate what was around the hole."—*Ex.*

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CONTENTS.

	PAGE
Scientific Temperance in the United States	33
The Woman's Christian Temperance Union and Education	36
Primary Lesson—Third Year—Grain and Beer	37
Grammar Lesson—Fifth or Sixth Year—Growth and Repair	40
Editorials	44
Experience Corner	46
Book Notices	48
Physiology Topics for November	48



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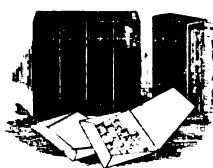
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Vol. XII

BOSTON, NOVEMBER, 1902

No. 3

A FAIRY DRAUGHTSMAN

JACK Frost has wings of rainbow
And of skates a dainty pair ;
He skims on the ice-bound waters,
He speeds through the frosty air ;
He carries a magic pencil,
And he sketches every night
Millions and millions of pictures
Before the morning light.

He draws for us the vision
Of his home at the Northern Pole,
The crystal sweep of the ice fields,
The frozen waves that roll
In hummock, and berg, and snowdrift
Across the Arctic sea,
And he smiles to think that no other
Can draw it so well as he.

—PRISCILLA LEONARD.

SCIENTIFIC TEMPERANCE IN THE UNITED STATES

RUSKIN says, "Know what you have to do and then do it."

The concern of the national superintendent of scientific temperance has ever been that every child in the public schools of this land be taught progressively the physiological reasons for obeying the laws of health, including those which teach total abstinence from alcoholic drinks and other narcotics. In no spirit of controversy or desire for priority in this climacteric hour, but as a matter of history, the origin of my interest and labors for this cause is here given.

BEGINNING OF THE WORK

Experience as a teacher in science combined with special study of the scientific aspects of the alcohol question, beginning in 1872, led me to the conviction that universal education as to the scientific facts in the case would mean prevention of the alcohol curse. Action quickly followed conviction. Efforts to get these truths into existing school literature began, and this study with such material as was then available was first introduced into the schools of what was then my own town, Hyde Park, Massachusetts.

The Woman's Christian Temperance Union came into existence in 1874. It was characteristic of Miss Willard's mental grasp that she,

too, saw that universal scientific temperance instruction is the key to the situation, and recommended efforts to secure it. In 1879, the resolution committing this organization to work for temperance text-books in all public schools was passed, and the writer was made chairman of a standing committee to translate that resolution into action.

The difficulty of working with a widely separated committee led the chairman to urge upon Miss Willard and others that this committee be abolished and a department created with one head. At the National Woman's Christian Temperance Union Convention, held in Boston, Oct. 28, 1880, it was so voted. The department of scientific temperance instruction thus came into being, and I was elected its superintendent, with Mrs. Alford of Brooklyn as department secretary.

In our room that night in Boston, bending over the map of the country, we said, "Now we have before us the gigantic work of planning to engraft the study of temperance physiology on the public school system of the United States." Mrs. Alford replied, "You plan and I will push." And push she did.

Abraham Lincoln said, "Whoever would write the laws of this republic on any subject must first write them in the hearts of the people." Following President Lincoln's philosophy, our work for the first two years consisted chiefly of a study of the causes that lead to the drink habit, and of widely extended public addresses concerning the compulsory scientific temperance education of all pupils in all our public schools. The cordial reception given the new movement in nearly every state in the Union showed that the country was ready for such legislation.

LEGAL PROVISION FOR THE STUDY

Twenty years ago this month I went to Vermont, and with the aid of the Woman's Christian Temperance Union of that state the passage was secured of the first temperance education law ever enacted in the world. To-day every state in the United States, every territory and new possession under our territorial laws, the District of Columbia, our military and naval academies, our Indian and colored schools, all are under laws which require the study of temperance physiology in the public schools. Michigan, the second state to pass such a law, was the first to require the study for all pupils in all schools. Very many states now

make the same requirement. Pennsylvania was the first state to add a penalty for non-compliance, and to require the study pursued "as a regular branch." The National Congress was the first to specify that the study shall be pursued with text-books in the hands of pupils who have text-books in other subjects. A host of other states has followed this example.

Our temperance education map is white today. No black cap indicates that any portion of our broad domain is without a temperance education law. The enactment of such a law in Georgia last December brought to the last child under our flag the legal right to a physiological temperance education.

DIVINE AND HUMAN INSTRUMENTALITY

For these great victories we render our reverent thanks first to the God of nations. Our white map is an earnest of his purposes of mercy for our race, our nation, and the world. It foreshadows the rapidly coming day when the children now in our schools having reached their majority will close the last saloon, making this country in truth the land of the free from the alcohol bondage, and the home of the brave who have abolished this destroyer from human habits and traffic.

One evening when the Civil War was over, and the first troops were passing north through Washington, President Lincoln caused a large transparency to be hung before the White House bearing these words: "*It is the Lord's doing, and it is marvellous in our eyes.*" While we seek our temperance education victories, "It is the Lord's doing, and to Him be all the praise; memory recalls the instruments he has used, the valiant workers in all this land who have perished in the long hard battles with hostile forces that have tried us in legislative halls and elsewhere. If these had yielded before the enemy, asking compromise, this map would never have been whitened. Napoleon said, "What France most needs is mothers." Our republic is safer for such mothers as constitute the noble host in Woman's Christian Temperance Union workers for sobriety, temperance education, strong of heart and clear of head. This host has not been diminished either by sufferings or persecution. It has been and is the constitutional law of organization, a sacred and free domain of work and life. It has been the less without the great and noble men and women who, and the spirit of the nation has been the more united and living in our midst. It is the great domain of the nation, the instrument of peace.

WHITE MAPS

Here is the white map of the United States

for, are those for the scientific accuracy of the indorsed school physiologies. The charges of inaccuracy, when probed, have been unsustained. God's truth against alcohol and other narcotics stands, and millions of children are being taught that truth in the public schools.

ENFORCEMENT

The census of 1890 shows that more than 22,000,000 children and youths of school age now under our flag are also under our temperance education laws. These millions will be the nation of tomorrow. The overwhelming majority of them is in the lower grades of our public schools. The report of the United States Commissioner of Education shows that the average length of school attendance for the whole United States is a little less than five years of 200 days each. While in the North Atlantic states the average is higher, because more attend the high school, those pupils whose attendance is less than the average come from classes that, especially need this instruction, because they are foreign born or children of foreign parentage with old world drinking habits. Therefore, the importance can not be overestimated of this study being faithfully pursued in the lower grades, with the help of text-books in the hands of pupils who use text-books in other subjects. In three of the New England states, Massachusetts, Connecticut, and Rhode Island, and in some of the western states, like Wisconsin, more than a majority of the present population, the law-making power of these states, is foreign born or children of foreign parentage.

Says Rev. A. H. Schaffter in an able paper on "Foreign Elements in American Civilization:"

"Never has the experiment been tried of admitting such multitudes of immigrants to the rights of citizenship so soon after their arrival, and giving them the right to help make laws, govern the country, and work out its destiny.

It is really a question of life or death to these old New England states, and even to our country as a whole, whether these vast hosts can be transformed into good American citizens. But be going to the root-evilness of human nature, we say, yes they can be made good citizens if a proper system is taken to the problem. Can this be? Yes, we use the right method. The children of these people in the lower grades of our public schools are very responsive to the new world laws they get from their teachers and their school books. If properly taught, they learn the temperance physiology lessons better than the parents who do not get the American law of temperance or its substance to getting on in the world. The children, indeed, are a

most effective missionary force for taking alcohol out of this problem of the assimilation of the many races that make up this American nation. But they so early leave school to become bread-winners that all the school can do for them must ordinarily be done the first four or five years, or in grades below the sixth. Hence, by all your love of God, home, and country, stand unflinchingly by this study in the lower grades, with good books in the hands of pupils who have books in other subjects.

GAIN

The gain in this as well as in all phases of the enforcement of our scientific temperance instruction laws this year is most encouraging. Kansas is rejoicing in having secured the adoption of the entire New Century Series of indorsed temperance physiologies for all pupils in all schools of that state, and Louisiana a similar adoption of the Blaisdell books. Constant watchfulness that ensures that every child in these states shall get the good teachings of these books will bury Mrs. Nation's hatchet. If Texas and Tennessee, both of which have state adoptions of temperance physiologies this year, follow Kansas or Louisiana's example in adopting indorsed books, the more northern states will need to look well to their future temperance laurels.

New York has furnished this year the unique example of a committee of distinguished citizens working with the Woman's Christian Temperance Union in a careful canvass of that state for evidence of the practical results of their strong temperance education law. This committee has published in a sixteen-page pamphlet its findings which present the strongest evidence of the good this study is doing, in training all pupils in all schools to better hygienic habits and to intelligent abstinence from alcohol and other narcotics.

TEACHERS

There are 300,000 teachers in the United

States whose duty it is to teach this subject. You can help them by sending them the *School Physiology Journal* and the literature that meets their needs. At the national scientific temperance headquarters you can get the answers to every objection made to this study. Find out what the objections are and send for light on the question for your teachers. The way to arouse interest is not to lower our standards but to show their reasonableness. Look out for the grading of the study. Temperance physiology is a progressive branch. Simple books should be put into the hands of pupils as soon as they are ready to use them, to be succeeded by more advanced texts as the pupil progresses. Much of the complaint that this study is a wearisome repetition is due to the fact that the same book is used for several successive grades of pupils. This is as absurd as it would

be to use the same reader in primary, intermediate and advanced classes.

RESULTS

The temperance cause in the United States is over one hundred years old, but the only new feature universally introduced within the last ten years is the scientific temperance education method in

the public schools. Therefore, results that have appeared within these years may justly be attributed, in part at least, to this education.

Among such results reported last year, was the increased length of life of four and one-tenth years shown by the census of 1900, due in part to the better knowledge gained in school of the laws of health, also the increased sobriety and consequent greater productive ability of the American workman, due again in part to the schools' teaching that alcohol injures working ability. It is something over ten years that these temperance education laws have been universally in force with the indorsed textbooks in the hands of pupils. Dr. Floyd Crandall, in an article in the *World's Work* shows that during these ten years there has been a decline in the consumption of distilled liquors in our country of over one gallon per



"Monarch of mountains they crowned him long ago,
On a throne of rocks, in a robe of clouds, with a diadem of snow."

capita, and a consequent decline in the diseases due to the use of such drinks. The consumption of beer and the resulting diseases have increased, though we now consume less than one half the beer that either Germany or England does.

This increasing consumption of beer points to the alarming figures of foreign immigration, more than 600,000 immigrants, most of them beer-drinkers, coming this year. If all would only realize this peril and work for the best enforcement of our temperance education laws, especially in the lower grades where alone the schools can reach and teach these children of other lands that real freedom means no beer, both they and our land of whose government they are soon to be a part may be saved.

God's commands are God's enablings.

MARY H. HUNT.

National and International Supt. of the Department of Scientific Temperance Instruction in the Woman's Christian Temperance Union.

From an address delivered before the National W. C. T. U. Convention, Portland, Maine, Oct. 22, 1902.

THE WOMAN'S CHRISTIAN TEMPERANCE UNION AND EDUCATION.

THE National Woman's Christian Temperance Union, the largest organization of women in the world, has just closed its twenty-ninth annual convention in Portland, Maine, with delegates from every state and territory in the United States and with many foreign visitors.

The various activities of this society are divided into departments each of which conducts its own special mission under the auspices of the general organization. From year to year the department of scientific temperance instruction in the public schools has exhibited a large map of the country, with the states in white that have enacted laws requiring the study by the pupils in the public schools of physiology, which includes, as a part of hygiene, special instruction as to the nature and effects of alcoholic drinks and other narcotics, and with states without such laws in black.

This was a jubilee year of this department in the national convention, as for the first time its great temperance education map is entirely white, signifying that temperance physiology is a mandatory public school study in every state, territory and new possession under our territorial laws.

TWO IMPORTANT RESOLUTIONS

The people are mistaken who imagine that the projectors and defenders of this study are "well meaning but misguided" enthusiasts,

who know nothing either of science or of the philosophy and practice of the best modern educational methods. At one time in the convention, when the delegates were all in their seats, every one was asked to rise who had been or is now a teacher, connected in any way with public or private education. Almost the entire body came to their feet. A further canvass showed that every phase of education was represented, from primary public school teachers to college and normal school instructors, school principals, supervisors, members of school committees and of boards of education. Hence, the delegates knew whereof they affirmed when, on motion of Miss Marie C. Brehm, President of Illinois, they passed unanimously the following preamble and resolution:

Whereas, President Charles W. Eliot of Harvard University, in his recent New Haven speech, has presented no evidence to prove that total abstinence is not supported by the exact experimentation of modern science, therefore,

Resolved, That we respectfully differ from his statement that "the effort to inculcate total abstinence in the public schools has been to the injury of science, because the manuals of instruction used for that purpose are inaccurate."

We remind the public that the teaching on this subject in the public schools which is approved by the advocates of this cause has the approval of men of acknowledged eminence in science, and *has never been proved false*. We, the National Woman's Christian Temperance Union, representing mothers and teachers who come into closest contact with the children of this country, testify to the great educational, hygienic, and moral value of this study. We therefore believe that its removal from our schools would be a national calamity which we pledge ourselves to do everything in our power to avert.

The following resolution was also adopted by the convention:

Resolved, That we stand committed to the principles and practice of compulsory scientific temperance instruction for all pupils in all public schools of this country.

We rejoice that this study is now universally mandatory in the United States, and urge our organization everywhere to resist every effort to weaken the laws that require it; to work for good, well graded text-books on this subject in the hands of pupils who use books on other subjects; and to oppose books that fail to teach total abstinence as revealed by modern science.



IT is cause of rejoicing that every state in the Union and every organized territory has established by law a system of universal public school education for its children. But the character of this education is of equal moment. Education is good, if it tends to make the child a better individual and a more efficient citizen; it is bad, if it tends in the opposite direction.

One indication that the people as a whole are alive to this issue is the unanimity with which they have likewise secured legislation throughout the country providing for the instruction of every child in the public schools in the laws of health and in the nature and effects of narcotics.

Over against these efforts to educate in the direction of right living must be set the work of those who would destroy health, mental power and character for the sake of their own ill-gotten profits. The liquor dealers, according to their own statement, are also seeking to "educate" the rising generation, but to far different ends. Their kindergarten lessons aim to form a taste for beer or cider, and the instruction is steadily progressive until the gutter is reached.

If we believe that the school and not the saloon is the proper educator of our children, it is our business to make its work effective and to see that it is done in time. No negative measures will avail. The child can be kept from bad habits only by helping him to form good ones. He will be saved from wrong notions regarding drink only by giving him correct ideas before he has learned to touch or taste it.

Where there is one boy in the primary who has never been offered a glass of cider or home-made beer, or a cigarette, there are many who have thus early been tempted. This is the overwhelming argument for the introduction of temperance lessons into the very earliest grades, and it is always in force.

In most cases when a lesson on beer is to be given, it will be found better to begin with its origin—grains, emphasizing the useful qualities

of these food plants, and then showing how these are perverted and lost when grain is made into beer, rather than to begin with what is to many pupils a more familiar sight, the beer itself.

GRAIN AS A FOOD

Find what the children already know about grain; what kinds they have seen and in what form, whether growing in a field, on sale in the grocery or market, or as prepared for the table. It will be a genuine discovery to some children to find that not only bread and biscuit, but johnny-cake, oatmeal in all its forms, shredded wheat, grapenuts, cake, pastry, tapioca, rice pudding, macaroni, are all made in part from grain such as we see growing out in the fields.

A hint in this direction will be enough to set them finding other foods made from grain. Each child may write on the board the name of some food which he had for breakfast this morning. When this has been done, let the class decide which of the foods named come from grain of some kind. Then have them write the name of this grain opposite that of the food made from it.

Talk about the use of grain as a food for birds and animals. Let the children tell what grains are fed to chickens. Which ones does the farmer give his cattle? What grains does a canary like best?

Who can think of another good use for grain? What does the farmer do with it in the spring, and sometimes in the fall? Tell how the ground is ploughed and harrowed and rolled until fine enough for the little seeds to be sowed or planted in it, then these are left to grow and produce more grain. Act out these various operations in pantomime with the children, until the scene is real even to those who never saw grain sowed or growing.

Country classes may tell what grains are grown in their vicinity and bring a stalk of each to school. In city classes, where trips to grain fields are not always feasible, outline on the board the stalk, roots, leaves, and blossoms or fruit of familiar grains for the children to copy, until they are thoroughly familiar with the general appearance of each.

Find how many know how an oatfield looks when the young shoots first appear. How can we know that such a field is oats instead of grass?

Show pictures of growing grain and of harvesting scenes. If any in the room have seen grain cut and carted to the barns or threshing-machines, let them tell the others about it, and how the grain changes in size and color as it grows and ripens. How does the farmer know when his grain is ready to cut? What does he do with what he raises?

Tell about the steam-threshers which separate the grain from the stalk and husk, of the mills which grind the grain into flour and meal, and then of the long trains which carry it to every part of the country to be made into different kinds of food for people and animals. Illustrate each step by pictures as far as these are obtainable. Papers and magazines are full of such material and large use should be made of it.

The class talk has now reached its starting point. Beginning with the familiar grains of their own locality, the children have traced their growth from planting to harvest time and have found some of the most important of the good uses to which they are put.

GRAIN AS A DRINK

Many children have also seen beer-wagons driven through the street, and through the open doors of saloons they have watched the rows of men which throng the counter, each with a glass of beer in his hand. Beer is often found on their home table, and they are allowed to drink it with the others because "it is made only from roots or from the same grain which they have just learned is an important food."

Why beer is not good to drink, and why the child should not even taste it are thus vital questions which the schools should help every young person answer.

Before the first question can be answered, we must explain very simply, perhaps in story form,

HOW BEER IS MADE

"Oh, mother, what does make that horrid smell?" asked Ralph Coe.

It was a sunshiny October day and they were out walking.

"It comes from this brewery," said Mrs. Coe, pointing to a tall brick building nearly opposite. "The men are making beer."

"Can't we see how they do it?" asked Ralph. "Frank Emerson says beer is made out of barley, but I don't see how that can be, because barley is good to eat, and you always tell me that beer is not fit to drink."

They stopped at the office to get permission. Just then they saw a large wagon drive up filled with sacks which the men began to unload.

"I think we shall find barley in those sacks," said Mrs. Coe, and sure enough that is what it was.

As soon as it was unloaded, the men emptied it into a stone cistern and turned on water enough to cover it.

"It will be left there until the grains are soft and nearly twice as large as they are now," said the guide. "Then it will be shovelled out and put in a warm room until it sprouts, like this."

He showed them some barley that had begun to grow. Each grain had a tiny sprout and several rootlets hanging from it.

"This is ready for the kiln," he told them, a dry warm chamber where it is kept until the moisture is dried out of it, and all the sprouts are killed.

"Then we grind it, add more water and yeast, and keep it warm until it ferments."

"By this time most of the solid parts of the grain are dissolved and our barley is changed into beer, ready to be drawn off into kegs or barrels and sold."

WHY BEER IS NOT GOOD TO DRINK

"It has a horrid smell," said Ralph, as he watched the men fill the huge casks, "but I don't see why it isn't good to drink if it is made out of good grain."

"Come back to the room where we saw the sprouting barley and I'll tell you," said his mother.

"Chew some of these grains and tell me how they taste."

"They are sweet. Is there sugar in them?"

"Yes, that is the food the baby plant lives on until it is large enough to get its own from the air and earth."

"But when people want to make grain into beer, they heat the grain until all these new little plants are dead. Then they add water to soak the sugar that would have been the plant's food out of the grain. This makes the water sweet."

"After the yeast has been added, another change takes place, and part of the sugar becomes alcohol. In this way the good part of the grain is lost and other things take its place which are not good at all."

"What makes all those bubbles?" asked Ralph, pointing to a huge tank filled with foaming liquor.

"That is a gas which is also made from the sugar. Most of it passes off into the air, but the alcohol stays behind, and it is this which makes beer such a bad drink, because alcohol is a poison."

"If beer were all alcohol, nobody could drink it. It would burn the throat and stomach and soon kill one. Beer has only a little alcohol in it; it is mostly water, but even this little alcohol is bad for people."

HOW BEER HURTS PEOPLE

"Do you drink beer?" asked Ralph of their guide.

"No, indeed," was his answer. "I should be likely to lose my place if I did. I could not do my work well enough, nor so much of it. Then, too, I should be more likely to make mis-

takes. Nobody in this brewery is allowed to drink beer."

"What makes anybody drink it then?"

"I don't know, I'm sure. Perhaps most people do not know it will hurt them when they begin, but they get to like the taste of it so well that they can't let it alone."

"If that is so, I'll never begin to drink it," said Ralph. "I'll take my grain in oatmeal the way mother cooks it. It smells better than beer, and tastes as good as it smells."

AUTHORITATIVE QUOTATIONS

BEER DOES NOT STRENGTHEN

It has become the pernicious custom to allow children the use of beer and wine, of alcohol in a variety of forms. People imagine that this imparts strength to the growing organism. But the very opposite is the result, for every organ is weakened.—J. KOLLMANN, M. D., University of Basle.

ALCOHOL IN BEER A POISON

There is absolutely no doubt that alcohol in any form, even in light beer, is a poison for the healthy child. The older children develop prematurely when they use alcoholic drinks; they make unsatisfactory progress in their studies, and become anæmic. Not seldom, their disposition is also spoiled; previously gentle and manageable, the use of alcoholics makes them excitable, irritable and unmanageable.—L. THOMAS, M. D., University of Freiburg.

BEER INJURES CHILD'S BODY AND MIND

It is inexcusable to let healthy children drink beer or wine; alcoholic drinks exert an injurious effect upon the body and mind of a child and they create bad habits.—DR. FIEDLER, Privy Medical Counsellor and Head Physician in the City Hospital, Dresden.

Beer is brutalizing. With sedentary habits, alcoholic drinks produce unhappy flesh sponges.—DR. BOCK, Leipsic.

ALCOHOL PREVENTS CHILD'S DEVELOPMENT

Alcoholic drinks produce incalculable injury upon children. Alcohol destroys the natural development of both mind and body.—A. BAER, M. D., Royal Sanitary Commissioner, Berlin.

BEER DRINKERS CONSUME MUCH ALCOHOL

Beer-drinkers, though not so often intoxicated, actually consume more alcohol than do those who use stronger drinks, because of the great amount of beer consumed and the more continuous imbibition of it, keeping up a constant supply of alcohol in the blood.—D. H. MANN, M. D.

ALCOHOL IN GINGER BEER

Out of 262 samples of herb and ginger beers, in 63 the proof-spirit exceeded 3 per cent, and ranged as high as 13.7 per cent, or more than 6 per cent pure alcohol.—JAMES EDMUNDS, M. D., M. R. C. P., London Medical Health Officer.

A SHEAF OF GRAIN*

This beautiful sheaf to us is given,
Watered by rain and dew from heaven.
Its life like ours a mystery holds.
A blessing or curse its husk unfolds.

A blessing I find and bring to view,
Designed for us our strength to renew.
We see man's wisdom and God's combined
In this bread of rye to feed mankind.



"I'll never begin to drink it," said Ralph.

A curse did I say, lies in this sheaf?
Yes, here it is, a symbol of grief.
This beautiful grain in Satan's employ
Has ruined many and many a boy.

O may the day be near at hand
When liquor is banished from our land,
And may the harvests so freely given
Be used to honor our Father in Heaven.

*A sheaf of rye should be placed upright near the speaker. Hidden in the top of the sheaf is a loaf of rye bread and an empty whiskey bottle to be displayed when mentioned.



GROWTH AND REPAIR

NEAR the western boundary of Russia is a granite shaft, on opposite sides of which two inscriptions have been carved. The one which faces the west reads,

Napoleon Bonaparte passed this way in 1812 with 410,000 men. The other which faces the east reads,

Napoleon Bonaparte passed this way in 1812 with 9,000 men.

These few words tell the story of the most fatal expedition ever undertaken. Not one man in forty-five of that splendid army ever returned to home or friends.

If a similar tablet were set up before the schoolhouses of this land it would mark the yearly coming of a far larger army, one reckoned in millions instead of thousands, the flower of American life, as Napoleon's army was the flower of France.

What should be recorded on the reverse of such a tablet? Diminished ranks, broken constitutions, enfeebled powers? Happily, the history of our modern public schools has no such disastrous story to chronicle. The warfare of this great army is peaceful and its work constructive. In addition to educating the mental powers, it aims to lay the foundation of a physical development so perfect as to fit every youth for the strain and exactions of life's maturer years.

To do this, it must teach the child from the very first the right care of his body, and as much of its structure and functions as is necessary to secure this end. In connection with the topic chosen this month for development in fifth and sixth grades, let the first point taken up be

CONDITIONS ON WHICH GROWTH DEPENDS

The pupil's interest is assured, for there was never a boy or girl who did not have seasons of longing to be grown up and who did not take the liveliest interest in the rapid growth of pets or flowers. Write on the board the question, Does everything grow? Then ask the class to write down the names of all the growing things

they can think of, taking two or three minutes for this exercise.

Place a white bean and a piece of candy of the same size and shape side by side, and bring out the reason why one will grow and the other will not. Ask if stones will grow; if coal, chalk, glass, or iron will. What is the reason? Write the word *Life*, on the board as the first essential to all growth.

Call attention to the fact that although both plants and animals are alive and thus have the power of growth, their growth does not depend on exactly the same conditions. What is needed to make a plant grow? an animal? Arrange the different answers in two columns on the board under the heading

ESSENTIALS TO GROWTH IN

PLANTS		ANIMALS	
Life	Water	Life	Water
Air	Warmth	Air	Food
Sunshine	Earth	Warmth	Sunshine
Quiet		Clothing	Shelter
		Exercise	Rest

Which requires more helps to its growth, an animal or a plant? Why? Give a reason why each of the helps mentioned above is necessary to the growth of plants or animals.

THE BODY'S NEED OF REPAIR

Of equal importance with growth is the need of repair in every living thing. Why is it that we have to have new clothes every little while? Why does the horse get a new coat of hair every winter, and the bird new feathers? When do the trees and bushes put on new clothes? Give other instances of worn-out parts which must be replaced by new.

Many children in the country have husked corn, and every boy plays ball. Why does one have to wear gloves in such work or play, to keep his hands from getting sore? How are these worn parts of the skin made good?

Almost every one feels tired at night. What is the reason? Name different occupations, walking, rowing, swimming, golf, horseback riding, reading, sewing, dishwashing, etc., and ask the pupils to tell which parts of the body are made tired by each, and why? How does a change of occupation sometimes rest one?

Increase these illustrations, if necessary, to show that every part of the body, inside and outside, has work to do, and hence is constantly wearing out and needing to be repaired. Write on the board the amount of waste which leaves the body daily through the lungs, skin, kidneys and bowels, about one twenty-fourth of its weight, and ask the pupils to find how many pounds this would amount to for each of them.

This waste must all be made good or we lose in weight. How do we make up for that which

is given off by the lungs? the skin? the other organs of excretion? Bring out the thought that the body, unlike any other machine, has the power to repair itself, but to do this it must have enough of the right kind of material to work with, and it is our business to see that such material is supplied.

GOOD BUILDING MATERIALS FOR THE BODY

Mention some building which is going up in your town or vicinity, and ask the class to name the materials used in its construction. Why could not wood or brick or glass be used to build all parts of it? Name the different materials of which the body is made up. Why would not muscle alone answer every purpose, or bone or nerve?

Show also that the body has more than one kind of work to do. It has to keep every part of itself in repair, it has to furnish enough heat to keep us alive, and enough strength for all our work and play. In all young people, too, it must provide something extra for growth. How do all these reasons make it necessary for us to eat more than one kind of food?

Have the class find from their books what kinds of food give most heat to the body, which kinds give strength and energy, and which aid growth and repair. Bring out the names of as many familiar foods as you have time, and help the class to decide in which of these lists each belongs. Ask why rice and potatoes are not needed at the same meal; why oatmeal is better eaten without sugar; why whole wheat bread is more wholesome than that made from fine white flour, why fatty foods are especially needed in winter and should be eaten sparingly in summer.

When good food materials have been selected for the body, why is their preparation almost equally important? Call for reasons why grains, meat and most vegetables need cooking before being eaten, and also suggest the best ways of cooking each. Put on the board such practical questions as the following and ask the pupils to look up answers:

Why are boiled meats more tender if allowed to simmer gently for a long time than if cooked rapidly?

Why are boiled meats more digestible than fried?

Why is bread a day old more wholesome than that just from the oven?

Why should potatoes be pared thinner than cucumbers?

Help the class to decide which fatty foods are most wholesome, and why. Cut open a grain of corn to show the starch. Show the same in a thin slice of potato under the microscope. Give each pupil dry grains of wheat to

chew, and then others which have been soaked until they have begun to sprout.

Explain that the sweet taste in the sprouted grain is due to the fact that its starch has changed to sugar, and that the young plant can live on sugar and can not live on starch. The same is true of people, hence we cook all starchy foods, because cooking also changes starch to sugar.

Call attention to the fact that starchy foods and sweet foods furnish heat and force to the body, hence should be used less in hot weather than in cold, and should never be made one's only food.

POOR BUILDING MATERIALS FOR THE BODY

Young people who have been brought up with pets know that in a litter of kittens or pigs there is usually one much smaller than the rest. This is generally because it has failed to get enough to eat. Sometimes one child may be smaller than others of his age for the same reason, but oftener it is because he has not been giving his body the right kind of food, or because he has taken into it substances like beer or tobacco which are not foods at all.

If an architect were to find one of his workmen putting poor bricks into one of his houses, even where it would never show, he would probably dismiss him at once. He could not afford to risk his reputation for the sake of a few bricks. Still less can anybody afford to risk becoming a puny, undersized man or woman, or of losing his health by putting poor materials into the building of his body.

Dwell again and again on the tests which decide whether any substance is a food or not, until every one in the class knows them by heart.

Does any substance tend, when taken into the body, to build it up and strengthen it, or to give it warmth or energy, and does it do this without harming it? If not, it should be ruled out of the diet of every girl and boy.

Apply these tests to all doubtful or suspicious substances. What is true, for instance, when these are applied to unripe or overripe fruit? to tea and coffee? to very rich food or large quantities of sweets? Show that while these things may have some food value, this is more than offset by the harm they do the digestive organs, especially in the case of young people in whom these organs have not yet reached their full size and strength.

What do the same tests show in the case of tobacco and all liquors which contain alcohol? Bring out the fact very clearly that these substances are not even poor building material for the body. Instead of aiding growth and giving strength they actually stunt the body and weaken it, making it unfit for effort in play, work or study.

Go over with the class the quotations which follow this lesson, having each read aloud in turn. Explain the meaning of all unfamiliar terms, then call upon different ones to give the substance of each quotation in his own words.

Show Raphael's picture of St. Michael overcoming Satan, and tell the story as given by Milton in *Paradise Lost*. In the same connection, write on the board President Roosevelt's saying, "Aggressive fighting for the right is the greatest sport the world ever saw."

Find how many know what this means. Nobody believes in dragons and fiends as Milton described them, and fortunately very few people are called upon to go to battle and fight live enemies. But we all have bad habits to fight against and temptations to overcome, and every one who wins in this battle is not only giving his body a chance to grow tall and strong but is also developing the clear brain and pure heart which are even more essential to the modern hero.

AUTHORITATIVE QUOTATIONS

ALCOHOL RETARDS GROWTH

Alcohol in almost incredibly small quantities will promote the growth and multiplication of microbes whose function is antagonistic to the protoplasm of organized beings. In the minutest quantities it is injurious to constructive protoplasm, and favorable to destructive protoplasm.—J. W. GROSVENOR, M. D., Buffalo, N. Y.

ALCOHOL PREVENTS MENTAL AND PHYSICAL DEVELOPMENT

Alcoholic drinks certainly do incalculable damage to children. Alcohol interferes with the normal development of body and mind.—DR. BAER, Counsellor to the Board of Health, and District Physician, Berlin.

Alcoholic drink is especially harmful to children, retarding their growth and development.—DR. VACHER, Medical Officer of Health, Cheshire, England.

INFLUENCE OF LIQUOR ON HEIGHT

In addition to its effects in producing criminals, idiots, and insane, alcohol arrests the growth. Children of alcoholic parents, trained to the early use of liquor, are stunted in their growth, and a French physician is inclined to ascribe to this fact the decrease in the standard of normal height shown by statistics in France.—*Bulletin de L'Academie de Medicine*.

The pernicious habit of supplying wine and beer to boys and girls is as much self-condemna-

tory as the issue of tobacco and opium.—CAPTAIN P. H. O'GORMAN, D. Ph.

ALCOHOL INTERFERES WITH NUTRITION

It is now generally recognized that children should never take alcohol, which, according to the highest authorities, exerts an exceedingly deleterious action on rapidly growing tissues, interfering with their nutrition, and preventing the development of their proper functions.—G. SIMS WOODHEAD, M. D., University of Cambridge, England.

ALCOHOL HINDERS ASSIMILATION

All the cells and tissues of the body are surrounded by membranes, on the integrity of which the silent work of building up the body depends. Alcohol, by its power to coagulate albumin, condenses, thickens and clogs these membranes, thereby hindering the assimilation of nutrient materials and the excretion of broken-down, retrograde products and toxins from the body.—E. STUVER, M. S., Ph. D., M. D.

ALCOHOLIC LIQUORS TEND TO FORM AN ALCOHOLIC APPETITE

There is no better way of interfering with the growth and development of body and mind in lads and lasses than by giving them alcoholic liquors. Boys and girls never want these things if they never begin them, but, if begun, a craving is speedily developed which may ruin them in after life.—*Medical Pioneer*.

TOBACCO STUNTS GROWTH

Tobacco in any form is a great injury to a growing boy, and the fashion of inhaling the smoke and then forcing it through the nose is deadly in its effect. It causes catarrh in the air-passages, throat, and nose and makes the smoker puny and stunted.—DR. BARTHOLOMEW, in *Journal of Inebriety*.

TOBACCO DULLS THE BRAIN

A tabulation of the records of the students who entered Yale in nine years, when all of the young men were examined and measured, shows that the smokers averaged fifteen months older than the non-smokers, but that they were inferior in height and lung capacity.—J. W. SEAVER, A. M., M. D., Yale.

TOBACCO WEAKENS THE SYSTEM

Children who use tobacco before reaching maturity have their growth interrupted. The excessive users are crippled in their general equipment and are in no form to wrestle successfully with any disease.—I. N. LOVE, M. D., St. Louis, Mo.

TOBACCO INJURES THE HEALTH

It is high time that something was done to put a stop to the cigarette smoking which is stunting the growth and ruining the health of thousands of boys. The prodigious increase of this evil during the last few years will tend to the deterioration of the race if it is not checked. —LABAN DENNIS, M. D., State Board of Health, of New Jersey.

TOBACCO LOWERS THE PHYSIQUE

In Germany, the mischief done to growing boys by tobacco has been found to be so great that the government has ordered the police to forbid lads under sixteen from smoking on the street. The German government is anxious about the physique of the soldiers of the future.—M. L. HOLBROOK, M. D., New York.

SMOKING LESSENS NUTRITION

Smoking prevents the healthy nutrition of the body. Hence comes, especially in young persons, an arrest of growth, low stature, a pallid and sallow complexion, and unhealthy supply of blood and weak bodily powers.—DR. COPELAND, F. R. S., England.

Little Tommy when told he was growing fast, answered:

"Yes, too fast; I think they water me too much. Why, I have to take a bath every morning."—*Journal of Education.*

THE LITTLE SCHOLAR'S CHOICE

"Though I were sleepy as a cat,"

The little scholar said,

"I would not care to take a nap
In any river's bed.

"And though I were so starved I scarce
Had strength to stand,
I'd beg through all the valley ere
I sought a table land.

"But, O! what jolly times I'd have!
I'd play and never stop,
If I could only take a string
And spin a mountain-top."

—*The Independent.*

DOWN TO SLEEP

November woods are bare and still;
November days are clear and bright;
Each noon burns up the morning's chill;
The morning's snow is gone by night.
Each day my steps grow slow, grow light,
As through the woods I reverent creep,
Watching all things lie down to sleep.

I never knew before what beds.
Fragrant to smell, and soft to touch,
The forest sifts and shapes and spreads;

I never knew before
how much
Of human sound there
is in such
Low tones as through
the forest sweep,
When all wild things lie
down to sleep.

—HELEN HUNT JACKSON.

WHERE HE BE-
LONGED

A Philadelphia mother recently went calling, accompanied by her five-year old boy. Being a pretty child of the Fauntleroy type, more than one of the women she visited said complimentary things concerning him, all of which he took with due modesty. Before the afternoon ended, however, he revealed his ideas of maternal pride. One of the women said jokingly, but with a serious face:

"My little man, I think I'll just keep you here with me. I have no little boy of my own. Do you think

your mother will sell you to me?"

"No, ma'am," he replied, promptly.

"You don't?" she asked in affected surprise.

"Why, don't you think I have money enough to buy you?"

"It isn't that," he answered politely, "but there are five of us, you see, and she would not care to break the set."—*New York Tribune.*

"All the tree tops lie asleep,
Like green waves on the sea,
As still as in the silent deep,
The ocean-woods may be."



"Aggressive fighting for the right is the greatest sport the world ever saw."

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HENRIETTA AMELIA MIRICK, Assistant Editor

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"Who said November's face was grim?
Who said her voice was harsh and sad?
I heard her sing in wood-paths dim,
I met her on the shore so glad,
So smiling I could kiss her feet!
There never was a month so sweet."

A GLIMPSE OF THE SCIENTIFIC TEMPERANCE HEADQUARTERS

THE National Department of Scientific Temperance Instruction was "at home" to all delegates and guests returning from the Portland Woman's Christian Temperance Union Convention, at its headquarters, 23 Trull street, Boston, on Thursday and Friday, October twenty-third and twenty-fourth. From early morning until evening a constant stream of visitors from all parts of the country availed themselves of this opportunity to inspect the home which for years has been almost wholly devoted to the several varied activities which constitute this work.

The study of the editor-in-chief of the JOURNAL claimed first attention, with its walls lined from floor to ceiling with scientific works of every description and constituting with other reference books an exceedingly valuable library. Conspicuous also in this room is what is doubtless the most exhaustive collection in the world of classified quotations on the scientific aspects of the alcohol question.

From the study guests passed to the Scientific Temperance Instruction Museum. Here are displayed the flags of the score or more nations in which steps have already been taken to provide some form of temperance education for their children. Here also are the pens with which many of the temperance education laws of this country were signed, including that with which President Cleveland signed the national bill in 1886, and the one with which the Governor of Georgia signed the bill which brought the last state in the Union under such a law in December of last year. Underneath these pens

are grouped translations of the indorsed physiologies into Japanese, Chinese, Hawaiian, Finnish and other languages.

On the second floor is found the Correspondence Room, lined with file cases, letter-books, and samples of the many leaflets issued by this department. Here a large part of the work is done, three typewriters making it possible to send out annually to all parts of the world from 5,000 to 10,000 letters and more than 1,000,000 pages of printed matter. Visitors found also on this floor the editorial rooms of the JOURNAL, furnished with all the paraphernalia necessary to the editing of a monthly magazine.

Up still another flight, literary assistants are busy translating into English the many scientific treatises on physiology, hygiene, and every phase of the alcohol question which thus far are published only in foreign languages.

Savants of many nations turn to these headquarters for information and assistance in advancing in their own countries the educational method of solving the alcohol problem, a method which is rapidly attracting attention throughout the civilized world. Dr. Richard Fröhlich, of Vienna, whose recent visit to this department was noted last month, was here on such an errand, and still more recently Dr. Dupré La Tour, of Paris, who is the accredited representative of the French government as a student of the economic phases of American methods of dealing with the alcohol question, brought letters of introduction to the editor as the world leader of temperance education. Not finding Mrs. Hunt in Boston, he presented these letters in Portland where he was made the guest of the National Woman's Christian Temperance Union Convention. He was also an interested visitor at the scientific temperance conferences with teachers in that city. No small part of the work done at these scientific temperance headquarters consists in correspondence on this subject with temperance workers and official educators in all parts of the world, who, as well as Americans, are always glad to get a glimpse of the practical workings of this department.

H. A. M.

NOVEMBER

November days are stealing,
All swiftly on their way;
The squirrels now are working,
The leaves are out at play;
The busy, busy children
Are gathering nuts so brown,
And birds are gaily planning
A winter out of town.

—CLARA L. STRONG.

A DREAM WHICH COMES TRUE

I READ of a boy who had a remarkable dream. He thought that the richest man in town came to him and said: "I am tired of my house and grounds; come and take care of them and I will give them to you." Then came an honored judge and said: "I want you to take my place; I am weary of going to court day after day; I will give you my seat on the bench if you will do my work." Then the doctor proposed that the boy take his extensive practice, and let him rest, and so on. At last, up shambled old Tommy, and said: "I'm wanted to fill a drunkard's grave. I have come to see if you will take my place in these public houses and on the streets."

This is a dream which is not all a dream. For every boy in this land to-day, who lives to grow up, some position is waiting, as surely as if rich man, judge, doctor, or drunkard stood ready to hand over his place at once. Which will you choose, boys? There are pulpits to be filled by God-fearing ministers, and thousands of other honorable places; but there are also prison cells and drunkard's graves.

Which do you choose?—*National Advocate.*

INDIAN SUMMER

The grain is gathered in;
The season's work is done.
No more the hurrying din
Of the stress of noon-time sun.
But beautiful and calm,
And full of healing balm,
The autumn rest is won.

The tired world stands still
In a trance of peace and praise;
And the light on field and hill
Is the light of bygone days;
And long-forgotten rhymes
And songs of the dear old times
Come back in the brooding haze.

—EUDORA S. BUMSTEAD.

THE ROSE GARDEN

The earth is cold with rain; the leaves lie sere
Where petals lately flung their scent and glow;
The scarlet hips alone are left to show
What lavish wealth of color once was here.

—JFANNIE PENDLETON EWING, in the *November Delineator.*

The state hires teachers to tell the boy about the physiological effects of alcohol, and licenses saloons to show him those effects.—*New Herald.*



Harvest Time.

L'Hermite.

Right thinking is the foundation of right living. To live the highest life of which we, as human beings, are capable, we must firmly believe and live up to our belief that we can, should, and must resolutely master our thoughts as well as our actions; and that we must control the mental pictures in which we indulge as much as the words which issue from our lips. — *Success.*

Strange month of moods! when even Nature feels

How sad a thing it is, the turning gray!
Yet over her the joy of April steals,
When some late bird sings from a leafless spray.

With spring-like skies come back spring memories:

She half forgets how near her winter is!

—CHARLOTTE FISKE BATES.

THE MAPLE TREE.

Where the low wind of autumn grieves,
A light shines from the maple leaves,
Whose gold and crimson tints must be
The soul of sunset in a tree.

—WILLIAM HAMILTON HAYNE.

EXPERIENCE CORNER

THERE are many practical devices which the wide-awake teacher will use to illumine her lessons in temperance physiology. A few are indicated below. These are by no means designed to take the place of regular, systematic study of the necessary facts of this subject, but merely to suggest side-lights by which truths learned may be illustrated and thus be impressed upon the minds and hearts of the pupils. The editors will welcome for these columns outlines for other devices which our readers have tried and found helpful.

PROBLEMS

1. A glass of beer costs five cents. If a man drinks two glasses a day, how much will he spend for beer in a week? in a year?

2. Mr. Anderson always gives a certain number of families a Thanksgiving dinner. For each family he spends for turkey \$2.00, for potatoes \$.20, for squash \$.10, for turnips \$.10, for onions \$.10, for celery \$.15, for crackers \$.10, for sugar \$.10, for cranberries \$.10, for oranges \$.30, for raisins \$.10, for nuts \$.15, for grapes \$.15. How much does the dinner for each family cost? If he spends instead \$36.50 a year for beer (see previous problem), how many families would lose their Thanksgiving dinner?

3. A man earns \$600 a year. He spends 1-6 of it for rent, 5-12 for food, 1-8 for fuel, 1-6 for clothing, 1-20 for books, papers and amusements, and puts the remainder in the savings bank. How much does he save?

4. If this man drinks three glasses of beer at five cents a glass every day in the year, how much less will he have to spend for each of these purposes? How much less can he save?

5. How much will two cigars a day at five cents each cost in six months' time? If instead of spending this sum for cigars, it should be put into the savings-bank, how much would it amount to in ten years at four per cent simple interest?

6. Instead of spending five cents a week for cigarettes a boy saved it and spent it for books. At the end of ten years he had bought a book-case for \$3.50 and had spent the remainder of the sum for books. How many books at \$.75 each did he buy?

7. At the birth of his son, a man decided to place at interest every year for the education of the boy when grown the amount he had previously spent for cigars and alcoholic drinks. He had smoked two cigars a day at ten cents each, and had drunk wine or beer costing fifteen cents a day. How much money had he for the boy's education when the boy was twelve years old, interest being four per cent?

8. \$900,000,000 are said to be spent in the United States each year for alcoholic liquors, and \$197,000,000 for boots and shoes. How much more is spent for intoxicating drinks than for boots and shoes? How many pairs of shoes at two dollars a pair could be bought with this balance?

9. At wages of \$50 per month how many men could be given work all the year round from the \$900,000,000 now spent for drink?

10. If we allow \$20 for a suit of clothes, \$15 for an overcoat, \$3 for a pair of shoes, \$3 for a hat and \$10 for other clothing, how many full outfits like this could be bought every year with the money spent in the United States for alcoholic liquors?

11. A dollar bill is 7 1-4 inches long. If the \$900,000,000 spent for intoxicating drinks in the United States in one year were laid in a line of one dollar bills placed end to end, how many miles long would the line be?

12. 1,040,564,000 gallons of intoxicating liquors are said to be used in the United States each year. How many miles long would a reservoir 100 feet wide and 30 feet deep have to be to hold this amount?

AN OBJECT LESSON

The following table of national expenditures in certain directions given in *New York Education* is impressive, and may be placed on a chart or on the blackboard:

During one year the United States spends for

Intoxicating Liquors	\$900,000,000
Bread	505,000,000
Cotton and Woolen Goods	452,000,000
Meat	303,000,000
Iron and Steel	206,000,000
Boots and Shoes	197,000,000
Sugar and Molasses	155,000,000
Tea, Coffee, Cocoa, Chocolate	145,000,000
Public Schools	96,000,000
Clergymen's Salaries	25,000,000
Foreign and Home Missions	5,500,000

This may be made more striking if placed on a chart with black perpendicular columns which show by their comparative height the moneys spent for the various objects. Have some of the pupils help make the chart. It will be a good exercise in proportion for them to ascertain the necessary relative height of the different columns.

MEMORY GEMS

A wineglass is never right side up until it is upside down.

The abuse of alcohol begins with its use.—
DR. R. KOPPE.

The only safe way of drinking is to leave off before you begin.—CANON FARRAR.

Only a clear brain can think God's thoughts

after Him. Only a steady hand can glorify the Divine Carpenter.—FRANCES E. WILLARD.

He who would keep himself to himself should imitate dumb animals and drink water.—BULWER-LYTTON.

There is no place on the railroad for the young man who drinks; in fact, I may say there is no place for him anywhere in the business world.—ANDREW CARNEGIE.

Temperance puts wood on the fire, meat in the barrel, flour in the tub, money in the purse, credit in the country, clothes on the children, contentment in the house, and vigor in the body.—BENJAMIN FRANKLIN.

Temperance brings blessings in both hands,—blessings for time and blessings for eternity.—FATHER MATTHEW.

The convictions of the boy are represented in the ballot of the man.—MARY H. HUNT.

DICTATION EXERCISES

1. A lord chief justice of England said: "Judges are weary of calling attention to drink as the principal cause of crime, but I can not refrain from saying that if they could make England sober, they would shut up nine-tenths of the prisons."

2. I have said a hundred times, and I am willing to say it again, that if anybody will take care of all the poverty and crime which results from drunkenness, the church of which I have the honor to be minister will alone take charge of all the rest of the poverty which needs outside relief in the city of Boston.—EDWARD EVERETT HALE.

3. It has been a study with me to mark boys who started in every grade of life with myself to see what has become of them. Some of them became clerks, merchants, manufacturers, lawyers, doctors. It is noteworthy that every one of those who drank is dead; not one of my age is living. Barring a few who were taken off by sickness, every one who proved a wreck and wrecked his family did it from drink and no other cause. Of those who were steady, industrious and hard-working men, who were

frugal and thrifty, every one, without exception, owns the house in which he lives, and has something laid by, the interest on which, with his home, would carry him through many a rainy day.—CHAUNCEY M. DEFEW.

4. A school boy in Australia recently put the matter briefly thus: "I abstain from liquor because, if I wish to excel as a cricketer, Grace says, 'Abstain'; as a walker, Weston says, 'Abstain'; as an oarsman, Hanlon says, 'Abstain'; as a swimmer, Webb says, 'Abstain'; as a missionary, Livingston says, 'Abstain'; as a doctor, Clark says 'Abstain'; as a preacher, Farrar says, 'Abstain.'"—*Youth's Companion*.



"Who climbs the grammar-tree, distinctly knows
Where noun, and verb, and participle grows."

5. Under no circumstances will I hire a man who smokes cigarettes. He is as dangerous at the front end of a motor as a man who drinks; in fact, he is more dangerous. His nerves are bound to give way at a critical moment. A motorman needs his nerve all the time, and a cigarette-smoker cannot stand the strain.—GEORGE BAUMHOFF, Superintendent Lindell Railway, St. Louis, Mo.

6. Laziness, nervousness, loss of power, inattention, lack of animation, and inability to work are the general symptoms of the disastrous tobacco habit, which, in my opinion, has driven more boys from the public schools than any other one thing, and has been the

ruin of hundreds of boys.—J. B. MILLARD, Supt. of Schools, Los Angeles, Cal.

YOUTHFUL AMBITION.—The Hostess (in reply to Willie's whisper)—"No, dear, you can't have any more cake. You've had enough."

The Guest—"What a good little boy. And what are you going to do when you're a man, my son?"

"Willie—"First of all I'm going to buy myself too much of everything I like to eat."—*Philadelphia Press*.

BOOK NOTICES

STANDARD FIRST READER, Edited by Isaac K. Funk, LL. D., Editor in-Chief of the Standard Dictionary, and Montrose J. Moses, B. S. Funk & Wagnalls Co., New York and London.

In certain lines this book is a radical departure from others of its kind. Really good ideas are presented, yet in such words as are easily within the reach of children from five to seven years of age. The illustrations are numerous and attractive and the songs are an excellent feature. Ample exercises in phonetics are provided, with directions for the correct use of tongue, teeth, lips, breath and vocal cords. The scientific alphabet, supplied with diacritic markings which have been indorsed by all leading English philologists, is used as an aid to pronunciation, printed in red for easy recognition. A complete vocabulary is given at the end of the book. Special help in the use of this book is given the teacher in a companion volume, the Teachers' Manual, which is published separately.

QUALITATIVE ANALYSIS, by L. M. Dennis, Professor of Analytical and Inorganic Chemistry, and Theodore Whittelsey, Instructor in Analytical Chemistry, Cornell University. 8 vo. Cloth. \$1.10. Ginn & Co., Boston.

Although designed for use in high schools, academies, and normal schools, as well as colleges, this manual, as its title indicates, deals only with qualitative analysis, and is not to be used without previous elemental knowledge of chemistry. The method of analysis suggested seems particularly happy. According to it, the student first examines solutions of the compounds of the metals and studies the action of various reagents upon these solutions. His next work is to arrange the elements into groups, using his previous experiments as a basis for the arrangement. Definite directions for performing each operation are given in detail, together with a full discussion of underlying reasons. Necessary precautions are also suggested. The use of black-faced type for essential parts of the text makes it easily possible to condense the work greatly where time is limited. An interesting and valuable feature is the frequent references to articles in chemical journals which discuss new methods or doubtful reactions.

THE STORY OF A LIVING TEMPLE, by Frederick M. Rossiter, B. S., M. D., and Mary Henry Rossiter, A. M. Fleming H. Revell Co., New York.

In scheme and general development this

book is not unlike several others already on the market in which the human body is likened to a house, a temple, or a workshop, but the method of treatment is fresh and interesting, as well as thoroughly up to date. The fact that the manuscript has been carefully read by Dr. Hall of the Northwestern University Medical School is sufficient guarantee of its scientific accuracy. The chapters on alcohol and other narcotics are emphatically on the side of total abstinence. The style is clear and easily understood. Teachers will find the book well adapted for supplementary reading in connection with work in physiology, for which fresh material is always in demand.

IN THE BRIGHT WORLD

Why to a care or a cross are we clinging?
The rivers are singing!

Making the music for sweet human words
Are all of the birds!

In fields where the blooms of the harvest begin
Flowers toil not, nor spin.

And though by the strength of the thunder-
cloud riven,
The hills smile to heaven!

Why to a care or a cross are we clinging,
With earth and skies singing?

—F. L. STANTON.

We have on hand a limited number of JOURNALS for the year 1901-1902, including all months except April and May. Files of the remaining eight copies will be sent postpaid to any address for \$.25 a set, or single copies by the hundred at \$.02 a copy as long as the supply holds out. This affords an excellent opportunity for teachers who did not have the JOURNAL last year to secure the lesson suggestions and other helps which these numbers contain.

PHYSIOLOGY TOPICS FOR NOVEMBER

PRIMARY—Parts of the Body used in Running, Walking, etc.: Legs, Feet, Toes. Senses of Touch and Smell. Muscles. Beer.

INTERMEDIATE—Brain and Nerves. Growth and Repair. Skin and Cleanliness.

ADVANCED—Cell Life and Growth. Bones. Bodily Motion and its Organs.

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THE SCHOOL PHYSIOLOGY JOURNAL

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CONTENTS.

	PAGE
How Can We Best Combat the Alcohol Evil John Madden, M. D.	49
Primary Lessons—First Year—The Five Senses	53
Editorials	57
Grammar Lesson—Fourth Year—The Framework of the Body	58
The Advent of Joel Rachael Irving	62
Book Notices	64
Physiology Topics for December	64



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DECEMBER, 1902

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School Physiology Journal

Vol. XII

BOSTON, DECEMBER, 1902

No. 4

THE WAITS

AT the break of Christmas Day,
Through the frosty starlight ringing,
Faint and sweet and far away,
Comes the sound of children singing,
Chanting, singing,
"Cease to mourn,
For Christ is born,
Peace and joy to all men bringing!"
Careless that the chill winds blow,
Growing stronger, sweeter, clearer,
Noiseless footfalls in the snow
Bring the happy voices nearer;
Hear them singing,
"Winter's drear;
But Christ is here,
Mirth and gladness with him bringing!"
"Merry Christmas!" hear them say,
As the East is growing lighter;
"May the joy of Christmas Day
Make your whole year gladder, brighter!"
Join their singing,
"To each home
Our Christ has come,
All Love's treasures with Him bringing!"

—MARGARET DELAND.

HOW CAN WE BEST COMBAT THE ALCOHOL EVIL

BY JOHN MADDEN, M. D.

AT present, the abolition of beverages the essential constituent of which is alcohol, which are now prized universal drinks, seems very remote, but to those who have watched the signs, the situation is pregnant with great things. Most important of all is the fact that science has repudiated alcohol. A knowledge based upon exact methods of experimentation has shown that it is neither a producer nor a conservator of vital force, that it destroys but does not build up, and this knowledge is fixed, incontrovertible. From a remedy of almost universal use as a stimulant, a food, a "tonic," a nerve sedative, the therapeutic use of alcohol is rapidly narrowing. With thoughtful medical men it is already limited to a few and unimportant conditions, such as require a hypnotic, anesthetic, or an analgesic, and even in this exclusively nerve deadening domain its limitations as a medical measure are very great, because other hypnotics, analgesics, sedatives,

are less uncertain in their action, less irritating, less dangerous in forming drug habits.

In the hands of the medical profession the alcohol question is safe. Investigators have demonstrated its physiologic effects and physicians the world over have accepted the verdict. Where the evidence has been equivocal, where there is reason to entertain doubt, different opinions are held and doubtful points are warmly contested by able and honorable men holding them; but the profession as a whole has exhibited a singular unanimity in casting alcohol from the therapeutic temple where for centuries it ruled as chief of all therapeutic measures. And these differing opinions are upon minor points only. Never again will it attain a tenth of its past predominance as an agent for the cure of disease. It has taken its place as a remedy of secondary and constantly decreasing importance.

The public learns slowly. Generations grow up and accept the existing order of things without a question as to their value, their morality, or, indeed, their expediency. Even in the most progressive of societies the inertia of conservatism is difficult to overcome. The Chinese do not possess all the reverence for the institutions of the fathers that there is in the world. We are slow to root out, to overturn, to destroy those institutions which have been a part of our civilization for generations or centuries. And this conservatism is valuable. It is the thing which makes society, which makes stable government possible. A people who are always ready to destroy the accepted order of things, always ready for a revolution, always ready to cast away the old and adopt the new, are an unprogressive people, and a dangerous element in a stable government. A stable society will tolerate abuses, will tolerate evils a long time rather than run any risks to itself in rooting them out. A stable society prefers to bear those ills it has, rather than to risk a harm to any considerable number of its new members by new conditions resulting from their abolition. Slavery was such an evil. Man conquered his weaker fellows, seized them, propagated them in chains, and made them minister unto his wants, made them feed and clothe him, build him palaces, wear out their lives in washing the earth that he might decorate himself with precious stones and have piles of precious metals.

Little by little, as the generations of men came and went, the hideousness of slavery became more and more evident, the public con-

science became quickened, until one day there came the crash and shock of battle, an ocean of blood and tears, and society saw through the lifted smoke the slavery monster dead.

Commerce in alcoholic beverages, their making and distribution, is as time honored as was the institution of slavery and as influential. Let one stop for a moment and consider the matter. There never was a time when a large percentage of human effort was not absorbed in the business. At present, tens of thousands of acres are covered with rye, barley, Indian corn, potatoes, and grape vines, the product of which will ultimately be dispensed over the bar of the saloon. On every hand millions in capital are engaging the entire effort of thousands of laborers to produce a material which destroys more life than wars destroy, produces more crime, more pauperism, more degeneracy of offspring than all other causes combined. Still society looks upon this destruction of its members with an astounding complaisance and makes no organized effort to stay alcohol's ravages.

In Europe, during the past thirty years, alcohol has directly destroyed 7,500,000 human lives, more than were destroyed by all the wars of the whole nineteenth century (*Thesis of Matti Helénus for degree of Ph. D., University of Copenhagen, 1902*). In America it has been not greatly less destructive.

But these appalling facts have not the power to move us, as a whole, to remedy the evil. Our people continue to sing the praises of wine and ale and beer and "stimulating brandy," our doctors quibble over the question as to whether a few drachms of the poison may not be regarded as a food, and our influential lay journals go mad with joy when a chemist, by a process of scientific sophistry, demonstrates that this fearfully destructive thing is "a food when taken in small doses."

No one undertakes to disprove this evidence. It is open, plain, palpable. We tremble at the thought of war, we read of a battle's slaughter with aching hearts and streaming eyes, we can not look upon an empty sleeve without feeling the emotion of pity, and we cheerfully pour out our millions to support the wives and children of those who fell in battle. But slaughter wrought by alcohol we heed not. We read of its threefold greater harm to life than that of war without a tremor or a tear, we see evidences of a destroyed liver, a crippled brain or heart, the result of alcoholic poisoning, and we scarcely give it a second thought, nor have we any pence in money to give to the countless widows and orphans of the dead drunkard.

More than this, our nation uses the utmost effort to prevent war, it employs the keenest of diplomatic ability, grants, subsidies, and treaties,

does everything that may be done in honor to avoid war; it spends hundreds of millions for a great navy and for land defence, to make war more impossible, to protect the lives of its people against war; but it is spending not a single cent to protect society against the threefold greater enemy to man, alcohol.

The abolition of slavery was wrought by a bloody war. The populace was stirred to its depths by stories of the slavery crime long before slavery was abolished. That slavery was wrong, that it was an injury to country and humanity was acknowledged by all but those who profited by the institution; but for generations society refused to right the wrong; and finally, when the institution of slavery was forever overthrown by the Emancipation Proclamation, it was not done because slavery was seen to be wrong, but as a measure to weaken an enemy in time of war.

Society, indeed, learns slowly, and is still slower in acting when the existence of a powerful institution, centuries old, is involved. Society recognizes the alcohol evil as it did the slavery evil. It imposes certain hardships on those who engage in the traffic, requires that they pay fines in advance for the evil which it will do; but these fines, called license money, bind society in a certain measure to protect the traffic. It is a sort of agreement between the representatives of society and alcohol, that those engaged in the traffic shall be protected in an illegitimate business if they are willing to pay the penalty imposed, a sort of bribery of society, acting through its executive, to permit wrong-doing. The penalty paid by the dealer, the vast majority of society are content to let him carry on his life-destroying business undisturbed.

Lay society has two chief reasons for refusing to abolish all traffic in alcoholic beverages: The first is that they are intrinsically valuable; that good wine, good ale and beer, and good spirits contribute to the health and happiness of humanity. The second is that only those who drink alcoholic beverages "in excess" are injured thereby.

Of all the opinions ever entertained by intelligent men these are probably the most absurd. Let us analyze them: The reason why alcoholic beverages are drunk is because they contain alcohol. Take away this essential constituent and who would drink them? Besides alcohol, wines contain a minute quantity of volatile substances called ethers, chiefly ethylic ether, water, sugar, and inorganic salts; and sometimes carbon dioxide, but who would drink wine for these constituents alone? Who would drink beer solely for its lupulin, carbon dioxide, maltose and extractive matter from the barley

of which it generally is made? What would be left of whiskey or brandy if the alcohol were taken from it? A solution of burnt sugar, with a minute quantity of fusel oil and ethylic ether.

Now, of all these constituents, only the insignificant quantity of sugar found in the wines and malt liquors has a food value or is a true food. Even the most ardent advocate of alcohol as a food will tell you that it is a food only in certain small quantities and under certain conditions, quantities which are totally disregarded by the ordinary drinker, and conditions which do not exist with a man outside of his bed. "A little wine for the stomach's sake" has, indeed, much to answer for.

Alcoholic beverages are, therefore, not nutritious, not valuable, not necessary to the organism of one who is not ill, and the first reason why the average layman drinks falls to the ground unsupported.

That alcohol is injurious only when taken in excess, that he who drinks in moderation is not injured thereby, as a reason for drinking, is the most marvelous piece of sophistry ever entertained by humanity. It is equivalent to saying that it is not the exposure to smallpox which kills, but the taking of the disease; not the drinking of the typhoid bacillus in contaminated water, but the growth of the bacillus in the intestinal canal; not the breathing of the tuberculous dust, but the growth of the bacillus after it is inhaled; not the aiming of the weapon and the pulling of the trigger, but the crash of the bullet through the brain, that kills.

Of all those who begin to drink in moderation, and that is almost every one who begins to drink at all, a greater or less percentage will drink to excess, become drunkards, die of acute or chronic alcohol poisoning, or beget degenerate children. It is just as inexorable that of those who drink some will die by alcohol as it is that of all unprotected persons exposed to smallpox some will contract and die with the disease.

Has not this evidence been accumulating a

thousand years? Is it not piled as high as the pyramids? Is it not accumulating every minute and every hour? Were not seven and one-half million human beings sent to their graves in the last thirty years in Europe alone, enough to populate more than twenty cities like the great city of Milwaukee, and was not every one of these, so untimely cut off, a victim to the sophistry that alcohol injures only when taken in excess. You can not change human nature. Man is so constituted that if he drinks at all he will drink to excess. Then if you can not change human nature, you must direct your efforts to the poison itself.



"That happy star
Which marked the spot where Christ was born
Long years ago one Christmas morn."

It is, too, perfectly proper for us to ask whether society drinks alcoholic beverages because it believes that they are wholesome, and injure only when taken in excess. The average man will tell you that he drinks because of the social element involved; he drinks because he is asked to join a friend in a social glass, but this is at best only a half truth. Let him analyze his feelings and he will find that it is not true. He will admit, if he is honest and sincere with himself, that he drinks because he likes the intoxicating effects of alcohol. He likes the sense of well-being it brings, that subtle sense of contentment,

satisfaction, and physical sense of warmth and freedom, for the time being, from all the petty aches and pains, all the trifling annoyances of life.

A few years ago some young scientific men of this city formed a "Hasheesh Club." They met every Sunday evening in the apartments of one of their number, and each took a measured portion of Indian hemp. For a few hours each was in a heaven of physical and mental bliss. Care was banished and pain, regret, sorrow, misfortune, disappointment they knew not. While the drug's effects lasted they were supremely happy.

The same is true of the man who goes to the "opium joint" to smoke and dream away unmeasured hours in narcotic bliss.

Let some one write a psychology of alcohol drinking, let him get his evidence at first hand, and he will be told that the seductive charm of alcohol's narcotizing influence is at the bottom of its consumption; and it is this very charm that makes its "moderate use" by all but a small percentage of individuals an impossibility.

Let us try to make society understand these things. Let us try to abolish this terrible, disastrous sophistry. Let us be unceasing in our efforts to teach that alcohol is a fearfully seductive poison, that it has no place in the human dietary, that if it is used at all it must be used in treatment of the sick and given by the physician as are given all other poisons which are used as medicines.

There are three important methods by which the public may be educated to abolish all traffic in alcoholic beverages:

1. In the public schools.
2. By the medical profession.
3. Through the columns of the great and influential lay press.

The first method of educating the public is thoroughly organized and well under way. It would be wise to make provision in every city for a course of lectures on the effects of alcohol, by members in the medical profession; not, of course, to substitute these lectures for text-book instruction, but to make them supplementary to the use of the text-book. Perhaps a better plan would be for the physicians to give lectures with demonstrations to teachers, say at teachers' institutes, thus preparing the teachers to give instruction in this as in every other subject taught to the pupils.

Most important of all the influences which could be enlisted in the cause of the anti-alcohol propaganda is that of the lay press. Let those great journals which have for their object the public good freely discuss the alcohol question in their columns. Let economists tell how many hundreds of millions are annually wasted by those who give their time to the making of the universal poison and those who are rendered incompetent to work for days, weeks, and years because they imbibe it; let phrenologists tell the people how light would be the burden of our penal institutions, and philanthropists how light would be the burden of our charity, could we but rid ourselves of the curse of alcoholic beverages; let alienists tell how great would be the decrease in insanity and imbecility, and sociologists tell how great would be the improvement in morality if alcohol as a beverage could be rooted out forever. When this is done through the columns of the journals which millions of people read, and if it is done in a dispassionate (if such terrible things

can be freed from passion), judicial way, every statement founded upon facts, we shall educate the people to that point which will make traffic in alcoholic beverages a thing of the past.

At the present time, the average journal is an alcohol apologist. It seeks rather to find an excuse for drinking than to tell the naked truth about drink.—*Quarterly Journal of Inebriety*.

The executive committee of the Swiss Society of Abstaining Teachers met at Berne, October 12, and decided to unite with the abstaining physicians of Switzerland in requesting the cantons to introduce into the normal schools regular, hygienic, anti-alcohol lessons. The committee has organized for its members an anti-alcohol circulating library. The society now numbers about two hundred members.

Make instruction obligatory up to fourteen years of age. Develop adult courses, advanced classes for those who have left school. Teach the children of the people by the best methods the elements of sciences, hygiene being the science in which anti-alcohol instruction must be embodied. Establish school libraries for developing the taste for reading; such are, in short, the direct and indirect measures to apply constantly for remedying the situation. When all the children leave the elementary schools so thoroughly taught that they will have solid anti-alcohol convictions, which the adult course will further reinforce, one can seriously hope that this generation will form an electoral body resolved on demanding from the deputies no longer palliatives but a serious anti-alcohol law vigorously applied. In a country with universal suffrage, the mass of people must be enlightened as to its true moral and material interests, because they are the source of the law-making body.

—From an address by M. A. Sluys, Director of Normal Schools, Brussels, on Combating Alcoholism by the School, delivered before the Patriotic League Against Alcoholism, April 27, 1902.

WHY

Why do bells for Christmas ring?
 Why do little children sing?
 Once a lovely, shining star
 Seen by shepherds from afar,
 Gently moved until its light
 Made a manger-cradle bright.
 There a darling Baby lay,
 Pillowed soft upon the hay;
 And its mother sang and smiled,
 "This is Christ, the holy Child."
 Therefore, bells for Christmas ring,
 Therefore, little children, sing!

—EUGENE FIELD.



Primary Lessons

FIRST YEAR

THE FIVE SENSES

AS far as possible, all work of the month in these grades should center in the Christmas idea, as well as breathe the Christmas spirit. This is especially true of lessons on the human body, and rightly, for whether taken up as a whole, or whether certain parts and their functions are to be considered, the one perfect model comes first to mind this month when all Christendom celebrates the birth of Him who was altogether lovely.

Select pictures of the Madonna and Christ Child which will especially appeal to little children, as a basis for lesson talks and reading exercises on the special senses, and plan for each child to have one of these pictures to carry home at the close of the work.

(1)

SIGHT

Character is largely determined by what one habitually looks at and thinks about. For this reason, if for no other, the child should early become familiar with the best pictures, songs and stories, until his tastes are formed and it is impossible for him to prefer the commonplace or the vulgar.

Next in importance to being able to choose wisely what to look at, is the ability to describe what one sees exactly as it is without drawing on the imagination. Both of these thoughts should be kept in mind in developing this topic.

Tell the ever new Christmas story as simply and vividly as you can, making it later the basis of the following

READING LESSON

One night, a great many years ago, there was a new star in the sky.

The shepherds saw it as they sat on the hills watching their sheep.

They left their flocks and followed the star.

It led them to the little town of Bethlehem.

There they found the Christ Child lying in a manger, in the stable.

His mother had made a soft nest of straw for her little one, because there was no room for them in the inn.

Wise men from the east came a long way to see the baby Jesus and bring him presents.

This was the first Christmas day.

CLASS TALK

Talk over the Christmas story with the children, emphasizing all that appeals to the sense of sight; the sheep on those far away hillsides, the shepherds keeping watch against wolves and other wild animals, the bright new star that suddenly appeared, the angels, the journey by night to Bethlehem, the humble stable, the cattle, the manger, and above all the little new baby with his mother and Joseph bending over him.

Suppose the shepherds had been blind or had refused to look up that night. How much they would have missed!

Get the children's ideas on each point in the story. Ask what hills they have seen. Where were they? How many have seen sheep or cattle grazing on the hills?

What is a shepherd? What does he do?

Tell how the shepherds in those eastern countries always go ahead of their sheep and call them, instead of driving them as men do here.

How many have been in a stable? Tell what a stable is for. Why did Joseph and Mary spend the night in one?

Find how many know what an inn is. What is our word for houses in which people can stay when they are travelling?

Mary and Joseph had a beautiful Christmas present that night, the first that anybody ever had and the very best in the world. What was it? How many have a baby brother or sister at home? When Jesus was a baby he had just such tiny hands and feet, soft hair and bright eyes. Can you think how he looked?

What kind of a bed did Jesus have to sleep in? How was it different from yours? We may be sure it was warm and cozy because his mother loved him just as your mother loves you, and she would be sure to make it soft and comfortable for her little one.

OBSERVATION WORK

Show Schœnherr's picture of the Nativity, reproduced on page 51. After the children have looked at it carefully, lay it aside while each tells all he can about it.

Who are the people we see here? What animals are in the picture? How many doves are there?

What is the stable made of? Where does the light come from that falls on the baby Jesus? What is his mother doing? Where are the shepherds? How are they dressed?

Let the children look at other pictures of the Nativity, and tell about them in a similar way, being very careful that they describe only what they actually see and remember.

Ask the class to point to the parts of the body with which they see. What is the name of these parts? How many eyes has each one of us? What have we seen today that we shall want to remember?

(2)

HEARING

Open the lesson on this sense with a Christmas song, Little Children can you Tell, The Little Sheep were Fast Asleep, Ring, Merry Christmas Bells, and Carol, oh, Carol are all favorites with the children, and easily understood by them. First repeat the words line by line, letting the children act out the suggestions in each, then sing the song as a whole.

'Twas the Night before Christmas is another favorite action poem. It may be recited by one child and acted by the rest, or repeated and acted by all in unison.

CLASS TALK

Ask the children to shut their eyes. While they keep them closed, repeat aloud one stanza of a familiar Christmas carol. Have them open their eyes and tell what you did.

How do we know when people speak? What do we hear with? Where are our ears? Tell some of the sounds we can hear. What kinds of sound do we like best? How can we make our voices so sweet and clear that others will like to listen to us?

Name some of the sounds people like especially to hear on Christmas day. At the same time, sketch on the board a chime of bells, a sleigh dashing over the snow, a chickadee singing on a bush, or whatever is mentioned by the children that lends itself to pictorial representation.

What were some of the sounds that Joseph and Mary heard on the first Christmas? With the picture just studied in mind, the children should think of the bleating of the sheep, the angel's song, the cooing of doves, the greeting of the shepherds. Be sure also that they mention the sound of the baby's voice, the sweetest music of all.

CHRISTMAS STORIES

Many stories as well as songs will suggest themselves as appropriate to the Christmas sea-

son, and while excellent new ones are written every year, such old favorites as Dickens' Christmas Carol, and the Fir Tree in Anderson's Fairy Tales should not be omitted.

Stories of Christmas celebrations in other countries and in other days, as well as the different ways in which the day was observed or neglected in our land by the early settlers, appeal warmly to children and are educative as well.

Beginning with the first Christmas in far off Bethlehem, tell the little ones how the custom of celebrating this day has spread all over the Christian world. Boys and girls who can not speak a word of English know all about Christmas and keep the day in their own fashion.

Probably every pupil in our public schools has had a share in the festivities of a Christmas tree. Then they will like to hear about the German children in whose home land this tree originated, with its lighted candles and gay ornaments. Perhaps they will think Germany a good country to live in, because there every child, no matter how many there are in the family or how poor they may be, always has his own little tree all to himself, hung with some kind of presents.

Be sure to tell them also of the big Yule log about which the little English children used to gather for their merry making, in houses trimmed with holly and mistletoe, and of the little waits outside who gathered under the windows to sing Christmas carols.

Make each story short enough so it can easily be retold by the child in his own words. It will thus serve as an exercise to train and develop both his sense of hearing and his powers of attention and expression in language.

Find how many know why people like to give presents on Christmas day, and tell of the greatest gift of all which came to every body in the world so many years ago. Write on the board for all to learn this little couplet,

The thought of Christmas is *giving*,
The heart of Christmas is *love*;

and help the children to think what they can give to others and do to make others happy at this Christmas season.

(3)

TASTE

Whatever helps the child to acquire self-control is of supreme importance. For this reason, if for no other, he should early be taught why he has been given the sense of taste, and how to use it in order that it may be his helpful servant rather than a dangerous master. The story is one means of gaining this end.

A LITTLE VICTOR

It was the day before Christmas and three

year old Victor was all alone. His mother was practising carols at the church, and nurse was lying down with a headache. For awhile the little fellow played happily by himself. He had on his regimentals, as Uncle Rufus called the striped sweater and long blue denim overalls that covered him all up, so he did not have to think about keeping his clothes clean.

By and by he grew hungry. It seemed a long time since dinner, so he went to the dining-room and looked in. Papa and Mamma were to have company that evening and the table was already set.

On the sideboard was a bon bon dish filled with chocolates, Victor's favorite kind of candy. His eyes sparkled as he picked out the very nicest piece. How good it would taste!

It would have disappeared down his little throat in another second, but just then he thought of something Mamma had said:

"If you are ever hungry when I am not here, eat just a piece of bread and butter."

Did that mean no chocolates? Somehow Victor was afraid it did, and he wanted them so much.

But he had promised Mamma, and good soldiers always kept a promise, Uncle Rufus said, and obeyed their general whether they wanted to or not. Uncle Rufus knew, for he had been in a real army, and had ridden a prancing steed and worn a sword.

When Victor remembered all this, it didn't take long to decide. The biggest chocolate went back in the dish with the rest, and when Mamma came home fifteen minutes afterward, she found her little son eating a slice of bread and butter.

CLASS TALK

Ask the children what the name Victor means. How was this little boy like his name? What did he conquer?

How can we make the sense of taste our servant? What does it do for us? Why do we need this sense?

Have the children name foods they like best, and which they would choose for their Christ-

mas dinner. Explain that it is largely due to our sense of taste that we can enjoy these things so much. Without it we could not tell sugar from salt, or be able to distinguish between other foods that look alike.

Tell why it is that nothing tastes good when we have overeaten. Our sense of taste has had too much work to do and has grown dull, just as a knife does after it has been used a long time. How can we keep the sense of taste always sharp and keen, ready to do the best work for us?

(4)

SMELL

Tell about this sense without naming it, until the children guess what it is. The description may take the form of a story, or the following

READING LESSON

I am one of your little helpers.

I know when the Christmas dinner is ready and just what you are going to have to eat.

As soon as you come into the house I tell you what Mamma has been baking.

I can tell what flowers are in blossom even when you have your eyes shut.

I can tell apples from oranges, and grapes from cherries without looking at them.

I can tell bad odors as well as good ones.

When the air in a room gets close and stuffy, I tell

you to open the windows.

I help the sense of taste.

What is my name?

CLASS TALK

Get the children to recall as many odors as they can and tell what they are. Separate these into odors that we like and those that we dislike.

Sweet odors make us take long deep breaths and these make us feel good all over. What shall we do when we are in a place where the odor is bad?

Explain why we notice a bad smell more quickly on entering a room than after we have been in it some time. Why is this a reason for



A Little Victor

airing a room thoroughly as soon as we notice any bad odor?

Where is the home of this little servant of ours? Point to it. When we have a cold in the head this little house sometimes swells so much that we have a hard time trying to smell. Then we can not enjoy our food, and one thing tastes very much like another. The best way is to take good care of this little servant and not get colds.

THINGS TO REMEMBER

Smell is meant to give us pleasure.

It helps taste tell us what things are good to eat.

Smell is a good little watchman.

When it brings a bad odor it is telling us to go away.

Smell gets tired just as the rest of our bodies do.

Then we must let it rest so that it will always tell us the truth.

(5)

TOUCH

An acute sense of touch is one of the results to be aimed at in all training of this sense. Beginning in the primary classes, children should be taught to recognize objects by feeling their size, shape and the character of their surfaces as readily as by sight. Such work makes the hands and fingers increasingly deft and sensitive, and helps to lay the foundation for all kinds of skilful hand work in later years.

Introduce exercises of this kind through the medium of games as often as possible, teaching the children in this way to tell one another by the sense of touch alone, and also to distinguish familiar objects in the same way.

GAMES

An enjoyable variation from the ordinary game of blind man's buff is to have all the children in the odd rows close their eyes. Those in the even rows then change places, each occupying a different seat from his usual one. All in the room now rise and stand in the aisles, those with eyes open alternating with those with eyes shut. The latter find who their neighbors are by passing their hands over their faces, hair, hands and clothes. Repeat, having the even rows close their eyes.

Fill a table with kindergarten blocks and bring up the children blindfolded one by one to identify one or more of the blocks by touch.

Blindfold each child in turn and have another child lead him to some part of the room. The one blindfolded tells where he is and names the articles of furniture within his reach.

Half the children in the room may close their eyes, while the others pass their pencils, books, paper, or any familiar object from their desks, to be recognized by touch alone.

LESSON TALK

Show Schöenherr's picture of the Nativity again, and help the children to decide which of the objects shown in it could be known by the touch; which by sight; which by each of the other senses.

Tell the story of the blind men who tried to find out what an elephant was by the sense of feeling. One felt of his broad side and said it was a wall, another felt of his tail and said it was a rope, and a third felt of one of his legs and declared it was a post.

Which of the other senses work with the sense of touch to help us know about things? Why do we need more than one sense?

Where is our sense of touch? Why do we need it all over the surface of our bodies? How many of you have ever burned the ends of your fingers? Could you feel things with them as you could before? We must take care not to hurt these good little helpers, because we can not get along at all without them.

Bring into class as large a picture as possible of the baby Christ. Point out his bright eyes and show how perfect all his senses seem to be. All babies are meant to have acute senses and just as strong healthy bodies as he had.

What can we do to keep our own in just as good condition as they were given to us, only growing stronger and better as we grow?

HOW WE INJURE OUR SIGHT

We injure our eyesight by the use of tobacco, also by the use of wine, spirits or beer. The wearing of tight neckwear, such as collars which are too small, or shirtbands or neckties tightly drawn should be avoided, as they prevent the downward column of blood returning to the heart, and injure the eyes from a slow or dammed up circulation of the blood. Reading in a bad light, or reading too long and tiring the eyes is a real cause of injury.—*Journal of Hygiene*.

OUT OF REACH

When his mother had reproved little Bob for some small offense, he looked at her reproachfully, saying:

"You hurt my feelings,"

"Well," said his mother, "come here and I will kiss them."

"You can't," he replied, "they're inside."

—*Little Chronicle*.

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THE REAL ISSUE

TWO years ago, critics of the study of temperance physiology in the public schools were devoting themselves to attacks upon the teaching that alcohol is a poison and not a food. That such criticisms have fallen to the ground before the march of truth is plainly shown by Dr. Madden's article in this JOURNAL. But, as we have said before, the critics still survive. Their new points of attack are essentially the same in different parts of the country, and are not unlike those of the brewers. The brewers have a financial interest in the people using beer. Hence, they are opposed to the schools teaching, with text-books in the hands of pupils, the physiological reasons against drinking beer and other alcoholic liquors. The brewers' opposition is especially directed against this study by children in the lower grades. And no wonder, for in those grades it will warn against beer the largest numbers, the majorities of the future on whose votes the coming fate of the liquor interest will depend.

Of course, they characterize as "biased" and "false" the truth that describes the ultimate demoralization resulting from the use of beer and the danger of beginning its use. The *Brewer's Journal* of Nov. 1, says (The italics are ours.):

"What the *Brewer's Journal* and every thinking member opposes is not the teaching of true temperance, which, in common with the inculcation of other virtues, should find its proper place in the curriculum of public schools, but the efforts made by the bigoted element to compel teachers to fill the minds of *children of tender years* with false information on that subject; to place in their hands text-books compiled for the sole purpose of conveying biased and deliberately falsified information regarding the moral and physical effects of beverages which many of them are familiar with and are taught from infancy to regard as an article of food."

It is unfortunate that those who are sensitive at being classed as wanting what the brewers do should in reality ask for the same thing.

Here is a case in point. The Massachusetts Committee of Twelve recommend:

First, No text-books in temperance physiology in the hands of pupils until the sixth year,* which would be after a large class of pupils has left school, who would thus be deprived of "the written word" on this subject which is too important and its neglect freighted with too serious consequences to be thus trifled with. Oral instruction only, without the use of books by pupils until the sixth year, is not adequate for geography or arithmetic, neither is it for physiology above the third year. All that the friends of this study ask concerning books is for their use by pupils who have books in other studies.

Second, This subject, as a formal (classroom) study, omitted in the fifth and seventh years and put into the ninth year instead. A majority of the pupils have left school before the ninth year, and on this plan the numbers who leave school at the end of the fifth year to become bread-winners would thereby be deprived of needed progressive instruction on this subject adapted to their development. Thus there would be individual loss to this class of children, many of whom are foreign born and all of whom especially need all the instruction the school can give them on this subject, while future intelligent public opinion so much needed on the alcohol, cigarette, and other hygienic questions would be diminished.

The proposition to put the study into the ninth year where it would reach only a fraction of children compared with the fifth year, while omitting it as a regular study in the fifth year and later in the seventh year, is practically to provide for the continuance of present conditions, namely, a future minority of temperance people voted down by a majority of alcohol and narcotic sympathizers.

It is said in objection, that if the study is omitted in the fifth year the child will resume it in the sixth with fresh interest. This might answer for the child who remains in school, if his physical habits meanwhile would remain stationary, and he were in no danger of coming into the sixth year with the cigarette and often the alcohol habit already partially formed. But this probability is very great, especially in the case of the children who are foreign born or of foreign parentage, who are rapidly making up the majority of future citizens in many states. It is the testimony of all teach-

*The positive recommendation of the Committee that the instruction be without the use of text-books in the first four years nullifies their next recommendation that there be a supplementary use of books.

(Continued on third page of cover)



Grammar Lessons

FOURTH YEAR

THE FRAMEWORK OF THE BODY

WHEN the late President McKinley was on one of his journeys through the United States, he saw from the car window a bareheaded, barefooted boy, ten or twelve years old.

"I used to be just such a country boy as that little fellow," he said to the statesmen who were with him, and presently it was found that every man in the party, including governors, senators and cabinet officers, had also begun life on a farm and amid humble surroundings.

The same virile qualities which have brought so many poor boys to eminence are also characteristic of such men as President Roosevelt and Cornelius Vanderbilt, who were born in luxurious surroundings but refused to be enervated by them. Poverty is not essential to the highest development of mind and body any more than wealth is. What is necessary is the keen eye, the quick brain, the well developed body which comes from simple hearty living in the open air, and a persistent reaching out after the best whether in work or play or study.

Every boy and girl needs the encouragement of such types of success, as they study their own bodies and learn how to take care of them. They need also to know that it is equally important to get rid of anything and everything which makes life so easy as to prevent effort. "When the fight begins within himself, a man's worth something."

The topic chosen for development this month in fourth grade work is fundamental. Without a skeleton the human being would be cut off from the possibility of achievement, with it he does the world's work. Bring out this point at the start, making every lesson objective and using all illustrative material within reach.

OBJECT OF THE BODY FRAMEWORK

Bring a kite into class and ask some boy what is the first thing to do if he were going to

make one. Have some one else tell why a kite needs a stiff framework, then call for other things which need a support of some kind to keep them in place. Show a wire hat frame and ask a girl what it is for. Hold a maple leaf up to the light and point out the ribs which run from the base to each point. Why are these harder and firmer than the rest of the leaf? Ask what it is that keeps tall buildings and trees firm and upright when strong winds blow against them.

Call upon each one in the class to name an animal which has a framework to support its body. Who can name one whose body is soft all the way through? Which kind would you rather have?

Perhaps some of the children have been clamming, and all will have seen oysters or clams in the shell. How is the framework of shell-fish different from our own? Name other animals which have an outside framework. Give a reason for this. Do such animals move slowly or quickly. What can you do that they can not? Show pictures of knights as they appeared in the Middle Ages, almost entirely covered with armour. These will explain better than words why it is much more convenient for people to have their skeleton on the inside of their bodies, where it will not prevent them from moving quickly and easily and doing whatever they like.

Sum up on the board the points brought out under this topic, calling for illustrations of each:

The body is built on a framework just as a house or tree is.

The framework holds it in shape and gives it form.

For this reason it must be firm and hard.

Animals like the snail and turtle have an outside framework to protect them from harm.

People need an inside framework to support the body without hindering its movements.

DIFFERENT KINDS OF BONES NEEDED

If the human body were round like a ball or cubical like a box, all its framework might be in one piece, or it could be made of several pieces all of the same size and shape. But very few parts of the body are alike, so we find few bones that are alike.

Have one pupil stand where all the class can see him. Then have them name the different parts of his body, head, neck, trunk, arms and legs, and tell what kind of bones is needed to give each part its proper shape, or what each part is like if we could see the framework just as it is.

Show the largest chart available of the skeleton, and let the class find and correct any mistakes they may have made in their previous descriptions. Have them point out all the long

bones in the body; those that are short and round; those that are thin and flat; giving a reason for the use of each shape.

Ask some one to find bones fitted together to form an arch, another to point out bones enclosing cavities, a third to find bones which fit into sockets. Call upon others to explain why all of these different shaped bones are necessary. Take one part of the skeleton at a time, and study the different kinds of bones found in each. Have the class make drawings of the most important bones. This will give a correct idea of their shape, size and fitness for the work they must do.

A very helpful exercise is to collect a number of bones, clean them thoroughly, and let the pupils decide as far as they can from the size and shape of each in what part of the animal it belonged. At the same time, have them note how each differs from the corresponding bone in the human body.

Summarize the facts brought out under this topic:

The framework of the body is made up of many parts.

These parts differ in size, shape and appearance.

The reason for these differences is that each part has a different kind of work to do.

Show also the stout cords which pass from one bone to another, fastened tightly to each to hold them together.

Call attention to the difference in size between the middle of a long bone and its two ends, and help the class to think of the reason for this.

Let each one move first one part of his body and then another until he knows which bones are movable and which are not. Take breathing exercises in this connection, letting the pupils try to see which one of them can most expand his chest.

Help the class to put into the form of complete statements the facts considered under this topic:

The many different bones which form the skeleton need to be fastened together.

The places where the bones are fastened are called joints.

Strong cords hold the bones together.

A hinge joint, like that at the knee or elbow, lets the bones move in two directions, up and down.

A mixed joint, like that at the wrist, lets the bones move up and down and part way around each other.

A ball and socket joint, like that at the shoulder or hip, lets the bone move in all directions.

A fixed joint, like that of the bones of the skull, allows no motion,



"There a darling baby lay, pillowed soft upon the hay:
While the mother sang and smiled, "This is Christ, the holy Child."

METHODS OF JOINING BONES

After finding that the framework of the body is made up of a large number of bones of all shapes and sizes, the next thing to learn is how all these pieces are fastened together. Use articles of furniture or tools in illustration, a door, a jack knife, a swinging blackboard, the sides and ends of a desk drawer.

Explain the advantages of these different kinds of joinings, one allowing free motion in several directions, another, motion in two directions, and a third, little or no motion but binding the parts together very firmly. Then ask the pupils to find joints in their bodies which work in each of these ways.

Remove all the meat from a chicken's wing and leg and bring these bones into class to show how the ball and socket and hinge joints work.

but holds the bones tightly together.

ESSENTIALS TO GROWTH

Get a fresh bone from the market and saw it through lengthwise. Then let all the class look at the inside through a good magnifying glass. Find how many know the reason for all the tiny holes which pass from the outside of the bone into the part next the marrow. If the reddish tinge of these parts does not suggest their use, tell the pupils that the holes are to allow the blood-vessels to pass into the bones to carry to them the food they need.

Ask what kind of a framework is necessary for a strong healthy body, and let the class suggest some of the things that will be required. The right kind of food will be one, and to know what this is we must know what the bones are

made of and what foods contain the materials the bones require.

Let the pupils look up these points for themselves in their books, and make a note of the fact that such foods as cereals, graham bread and milk contain what the bones need to make them grow and give them strength.

Appoint delegates from the class to visit some grocery and make a list of all cereals they find there on sale. Then have the rest make out a number of breakfast menus using a different cereal for each. Explain to them how cereal foods are changed in the process of cooking, and why it is important to cook them slowly a long time.

Points to be remembered may be summarized thus :

There are many very tiny holes in the bones so that the blood-vessels can pass through to carry food to every part of them.

The hard part of bones is made largely of lime, so our food must contain lime to make the bones grow.

There is lime for the bones in such foods as milk, cereals and graham bread.

Cereals should be cooked slowly a long time.

THINGS TO AVOID

Modern surgery together with hygiene is rapidly making deformity unnecessary if not unknown, but children should early be taught that much depends on them. Ask what will happen to a young tree if it is kept bent to one side. What will happen to a boy or girl who always carries everything in the right hand, who stands often on one foot with all the weight of the body on that side, or who slides down in a chair and sits on the end of the spine.

Carry to school the breast bone of a chicken and let the class feel how soft it is, the upper part being only gristle instead of bone. Suppose we should tie a piece of stout cloth fastened together with whalebone around a chicken's body and make him wear it, what difference would this make in the growth of his bones? A child's bones are just as soft proportionately, then what will be the effect on them if tight shoes are worn, or if corsets or tight bands are worn about the waist?

Country children often look forward to the time of cider-making in the fall as a great treat, while those in the city are likely to prefer beer. These drinks will appear to them in a new light, if they learn in connection with this lesson that the alcohol such drinks contain can stunt the growth of their bodily framework and keep them small and stunted all their lives.

Children always think of being grown up as being tall and large. Bring out the fact very plainly that all drinks which contain alcohol, and cigarettes as well, work directly against

this end, and that the tendency of such things is to make undersized men and women.

Put on the board as points to remember the following :

We must sit and stand straight when we are children, if we want to be straight when we are men and women.

Young people's bones are so soft that tight shoes or clothing will change the shape of their bodies and make them deformed.

There is alcohol in beer and cider, and alcohol stunts the growth of children.

A boy who smokes cigarettes is likely to grow up small and puny.

AUTHORITATIVE QUOTATIONS

ALCOHOL STUNTS GROWTH

The injurious effect of alcohol on the entire development of the child is evident from the fact that children who drink spirituous liquors are noticeably stunted in growth.—ADOLF FRICK, M. D., University of Zurich.

Alcoholic drinks certainly do incalculable damage to children. Alcohol interferes with the normal development of body and mind.—A. BAER, M. D., Counsellor to Board of Health, Berlin.

TOBACCO AND PREMATURE AGE

In Portugal, where smoking is indulged in from the earliest possible age, the children, especially among the neglected ones of the poor, have a stunted and prematurely aged appearance.—THOMAS MORE MADDEN, M. D.

TOBACCO IMPAIRS GROWTH AND NUTRITION

Nutrition is impaired by the use of tobacco in youth, during the age of growth and development.—JAMES STEWART, M. D., Head of Medical Staff of Royal Victoria Hospital, Montreal.

An anti-alcohol society of railroad workmen and employees with already more than 600 members has lately been organized in France, its object being to combat the ravages which alcohol in all its forms is daily making upon the social organism.

Teaching the evils of intemperance will not prevent drunkenness. What is needed is teaching the danger of beginning to drink.

All his glory and beauty come from within, and there he delights to dwell, his visits there are frequent, his conversation sweet, his comforts refreshing, and his peace passing all understanding.—THOMAS à KEMPIS.

FOREIGN RAILROADS AND THE ALCOHOL QUESTION

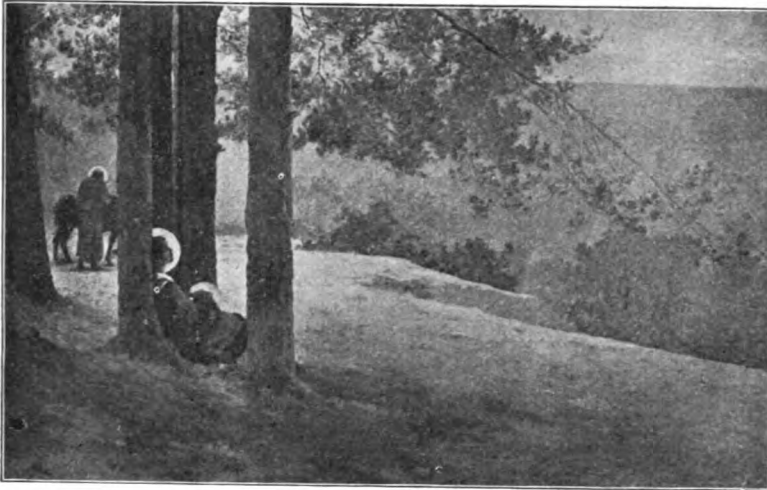
The German Association of railroad physicians held its fifth annual meeting in Munich on September 17, 18, and 19. Among the papers presented was one by Dr. Raub of Nuremberg on "The means of combating alcohol among railroad employees." The speaker mentioned the importance of a thorough inquiry by railroads as to the effects of alcoholism among their employees, especially a close study of the influence upon vision of the use of alcoholic drinks. "An employee must not see green signals as red." This preliminary work finished, the injury of alcoholic drinks having been demonstrated to railroad employees, the latter would accept more readily the restrictive measures which the management would take. Under this latter head, Dr. Raub proposes to forbid

require total abstinence of their employees, a requirement which has largely become general since the schools of the United States began to teach the danger in the use of alcoholic drinks.

The same instruction has made the employees ready to accept the restrictive measures laid down by the railroad companies, and thus has secured the very ends which Dr. Raub suggests as necessary.

THE LITTLE WILDFLOWERS

The little wildflowers to sleep have gone,
 'Way down in their cozy beds;
 A thick brown blanket of leaves they've drawn
 Right over their little heads.
 For well they know cold weather's about—
 The time when Jack Frost appears,
 And that some night, if they don't watch out,
 He'll come and bite off their ears.



"Out of Egypt have I called my Son"

employees to use alcoholic drinks while on duty, and to compel locomotive engineers to be total abstainers, as they are charged with heavy responsibilities, and a moment of drunkenness on their part endangers hundreds of lives.

"But," adds Dr. Raub, "railroad companies should replace alcohol by something better. Healthful, inexpensive, non-alcoholic drinks should be at the disposal of the employees in order that nothing may be neglected which will ensure their well-being."

The report of Dr. Raub was vigorously applauded, especially by the high railroad officials who were present at the meeting.

'It is significant that Dr. Raub's recommendations are quite in line with the course of events in the United States in this matter. The railroads in this country now almost universally

They know that his partner, Mr. Snow,
 Will also in time be due,
 For old Mother Nature told them so,
 And they know that it must be true.
 So, tightly tucked in their beds, they lie,
 And laugh in their dreams so fair,
 To think that neither, in passing by,
 Will be able to find them there!

The little wildflowers are tired of play,
 And weary of field and sun;
 The birds and the bees have gone away,
 The song of the rain is done.
 So now they nod on their beds of sod,
 While winter winds o'er them sing,
 And sleep so deep, knowing well that God
 Will awaken them in the spring.

—JAMES COURTNEY CHALLIS.

THE ADVENT OF JOEL.

"And pray a gladsome Christmas
To all good Christian men.
Carol, brothers, carol,
Christmas once again."

THE last words of the quaint old carol were the signal for the boys that the choir rehearsal was over. One by one they seized their caps and coats and disappeared out of the door with whistles and shouts of pent up Christmas feeling, such as can only be known by a choir boy who has been practising carols in a holly-trimmed Sunday school room on Christmas morning.

Earle Benton, the boy soloist, lingered behind the rest. The choir master left his seat on the organ bench, and came over and laid his hand on the boy's shoulder.

"Be sure to be early tonight, my boy," he said. "You know I'm depending on you to make the concert a success. There isn't another boy in the choir can take that high C in your anthem. It's nothing to be conceited about," he hastened to add as Earle straightened himself with conscious pride. "You don't deserve any great credit because you can sing. A voice is a God-given gift that one is born with or goes without all his life. You happen to have one, that's all. I wish we had another high soprano to substitute for you once in a while. Well, what do *you* want?"

An undersized boy, carrying a large pack of morning papers, shuffled swiftly down the aisle and stopped before him with eyes shining with excitement.

"Say, mister," he volunteered, "I can sing his pieces."

"Why, it's our paper boy," Earle ejaculated.

The boy nodded,

"Yup," he assented briefly, "I allus tries to listen outside the winder when youse fellers is practisin'. Then I goes home and sings the things to the kids."

The master looked down at him a moment, trying to keep the amusement out of his eyes. He was a curious figure, this diminutive newsboy, with a sturdy combination of enterprise and impudence assertive in his every gesture, and betraying itself in the peculiar redness of his hair, the tilt of his freckled nose, and even the set of the giant, frostbitten, yellow chrysanthemum worn jauntily in the buttonhole of his thin coat.

Mr. Whiting sat down once more and played over the prelude to the anthem the boys had been practising.

"Come here," he said, beckoning to the newcomer, and smiling indulgently.

The boy hesitated a moment, glancing cautiously at Earle. He reluctantly laid down up-

on the piano the bundle of papers he carried and went over to the organ, and then the amused smile that had played about Mr. Whiting's lips died away, for the boy began to sing, and as he heard the first appealing notes the master knew that he was singing as no child had ever sung for him before. The untrained flexible soprano ran on unfalteringly, putting all unconsciously into the simple hymn the story of a short life that had known many heartaches and few pleasures, and as the last notes died away there was a moment's silence, for the master could not trust himself to speak. Not so the newsboy. His thin, sharp face turned from Mr. Whiting to Earle scornfully.

"Say, why don't youse say nuthin'?" he said, retreating toward the door, with a quick side-wise motion, seizing as he did so the bundle of papers reposing on the piano.

Earle, who had been standing by silent with envying admiration, laughed in spite of himself.

The choir master cleared his throat.

"What's your name?"

"Reid." The boy clipped the monosyllable out sharply.

"Well, then, Reid, how would you like to sing in this choir?"

The master never forgot the expression that his question brought out on the face of the street urchin. For a moment it was a study in suspicion, unbelief, scorn, struggling with a great yearning desire that the words might be true.

"You're foolin'," the boy said incredulously, and it took several minutes for Mr. Whiting to convince him that he meant what he said.

Five minutes later, Joel Reid stood outside the church pinching himself to see if he were awake. Ever since he had been a tiny shaver he had hovered about the doors of churches to catch glimpses of the long train of white-robed choristers, and as he grew older he had dreamed with all the fervor of a music-loving soul of becoming one of them some day, and now the master had said that that day had come. He must still be dreaming.

"You forgot your hat." It was Earle's laughing voice that aroused him. He took the cap that Earle held out to him and put it on. He could not help laughing himself as he thought how foolish he must have looked bareheaded. It was the first time in his life that he had so far forgotten himself.

Earle eyed curiously for a moment this new kind of choir boy, as if figuring up whether it was worth while cultivating his friendship. He evidently decided that it was.

"Say, Joel," he said unceremoniously, "if you'll come down to my house I'll show you my presents. Let's race. I'll bet I can beat you."

Joel's sporting instincts were sufficiently keen not to let the challenge go by. Together they ran down the broad avenue and drew up out of breath before a bow window filled with the pale gold and green of Scotch heather.

Earle opened the door with the shiny brass knocker, and led the way down the polished hall. The dining-room door was open, and through it a savory steamy odor of stewing, baking, and boiling was wafted through the house. As they passed the door, the newsboy sniffed greedily and stole a longing sidewise glance at the table already set for dinner. The sunlight, slanting across it, caught the glint of cut glass and silver, of such a richness as he had never seen before, outside of a shop window. Earle saw the wonder manifest on the other boy's face and laughed.

"Say," he said, "I'm thirsty. Let's get a drink."

Joel was not loath to explore the wonderful room. There was a tall decanter of rich red wine on a side table, set about by graceful slender goblets, and as they crossed the floor Earle caught sight of it. An idea occurred to him. He glanced around cautiously.

"It's Christmas," he said, "and I'm going to drink your health the way my father does."

He poured out two glasses of the sparkling liquor.

"Drink it quick before any one comes," he whispered.

Joel smelled the wine and pushed the glass away.

"I don't want it," he said stiffly.

Earle laughed.

"That's because you're not used to it," he boasted. "Just watch me."

He raised his glass and drank it, and then reached out intending to pour a second, but, to his astonishment, Joel seized the decanter.

"You can't have any more while I'm here," he said shortly. "You ought to know enough not to touch wine or beer or any of them things."

"Why?" Earle demanded angrily.

"'Cause they're bad," Joel retorted. "They kill your father and make your mother have to work too hard, and if you once begin to drink them they make you want more and more. I guess I know."

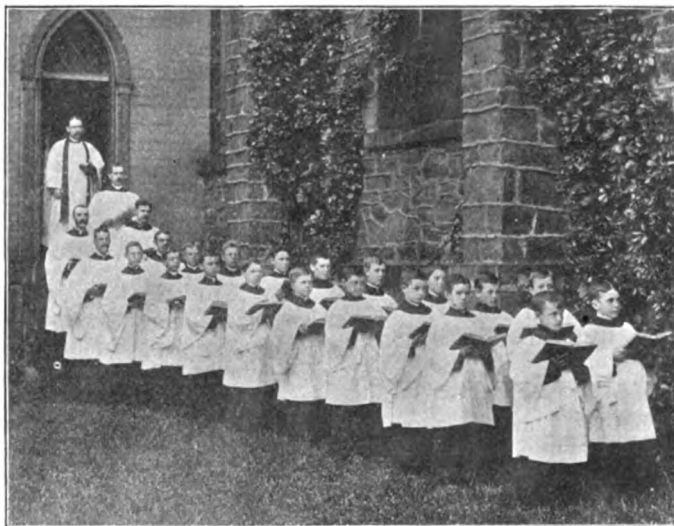
Earle hesitated a moment.

"It's cheap beer that does that," he said scornfully. "Wine's different. Every gentleman drinks it. You're a coward to be afraid of it."

Almost before the taunt was out of his mouth he repented of the words. He ran to the door. But Joel was already at the foot of the steps and when Earle called him he would not turn back.

Two hours later Joel Reid was repeating for the fifth time to his admiring family the story of the wonderful choir rehearsal. For the fifth

time he adorned it with embellishments such as a newsboy alone knows how to bestow. And for the fifth time also, six small, shrill-voiced Reids were preparing to vent their appreciation in wild enthusiastic hoots of joy as he reached the climax. But their demonstration was rudely interrupted. There



"Carol, children, carol, carol joyfully:
Carol for the coming of Christ's Nativity."

was a knock at the outside door and Joel, opening it, faced Mr. Whiting. He could not have been more surprised if he had confronted the President of the United States.

As he saw the boy, a look of relief came over the choir master's face.

"I've been inquiring all over the neighborhood to find where you lived, Reid," he said. "I want you to sing a solo tonight, and you must come for rehearsal now."

And then the family listened as to a fairy tale as he explained that the soloist, Earle Benton, had been taken suddenly ill and could not sing.

So the newsboy, Joel, led the choir at St. Anne's that night. And as the clear soaring tones of his strong young voice filled the great church, the choir boys ceased for a time to wonder at his sudden coming into their midst,

and at the awkwardness of his odd little figure, for like every person in the vast congregation they were conscious only that he was causing chords of beauty to vibrate in their natures that they had never known were there. As for Joel, for the first time in his short life he was perfectly happy.

The next morning Joel carried about to his customers papers with his own picture on the first page. In front of Mr. Benton's he met Earle wearing a heavy ulster and looking pale. The rich boy flushed when he saw Joel, but he ran down the steps to meet him.

"Say," he said sheepishly, holding out ten cents, "I want some extra copies of the paper telling about last night. I want to see how I would have looked if —"

He broke off and then went on impulsively.

"Joel, I want to tell you I guess you were right yesterday. I've found out what wine does for a fellow, and I'm never going to drink any more of it. Father's locked it up and we're not going to have it on the table again. Be sure you call for me on your way to rehearsal tomorrow night."

And Joel went on his way rejoicing that he had found a friend. —RACHEL IRVING.

THE ORIOLE'S CHRISTMAS STOCKING

"Just as morn was fading amid her misty rings,
And every stocking was stuffed with childhood's
precious things,

Old Kris Kringle looked around and saw on the
elm tree bough

High hung, an oriole's nest, lonely and empty
now.

"'Quite like a stocking,' he laughed, 'hung up
there in the tree.

I didn't suppose the birds expected a visit from
me.'

Then old Kris Kringle who loves a joke as well
as the best,

Dropped a handful of snowflakes into the ori-
ole's empty nest."

"The utterances of the philosopher today be-
come the sayings of the market-place tomorrow."

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frequent causes and symptoms and suggesting
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(Continued from page 57)

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CONTENTS.

	PAGE
Demonstration Evening at Portland	65
Primary Lessons—Second Year—Some Needs of the Body	68
Grammar Lessons—Fifth or Sixth Year—The Organs of Breathing	72
Editorials	75
High School—Excretion	77
Methods of Teaching Scientific Temperance, Delos Fall	79
One Boy in Ten to Become a Drunkard	80
Book Notices	80
Physiology Topics for January	80



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And A Job.

School Physiology Journal

Vol. XII

BOSTON, JANUARY, 1903

No. 5



OCTOBER 20, 1902

BY MARY H. HUNT

IN response to urgent requests, we reproduce for JOURNAL readers the representation of the Department of Scientific Temperance Instruction in the public schools as set forth on Demonstration Night at the late annual convention of the National Woman's Christian Temperance Union in Portland, Maine. For the benefit of those wishing to reproduce the exhibition, certain features are somewhat more fully developed here than was possible in the limited time at our disposal in Portland.

Scene, Jefferson Theater, Portland, Maine.

The National Superintendent of the Department of Scientific Temperance Instruction in schools and colleges came upon the large, beautifully decorated stage accompanied by a standard-bearer carrying a banner on which was inscribed the name of the department. Immediately the large temperance education map of the United States, for the first time showing all the states in white because scientific temperance is now a mandatory study in all the public schools of the nation, slowly descended from the ceiling and hung just above the heads of the actors in full view of the audience.

Stepping to the front, the Superintendent said :

You have heard of the Loyal Temperance Legion and its work in training its members, boys and girls 200,000 strong, to become the future temperance workers of this country. That is a grand work, but this is a government of majorities, therefore the success of these future temperance workers when they come to their kingdom will depend upon their finding a majority of the people in this land not wanting to drink alcoholic liquors, but anxious to have them abolished. If the Loyal Legioners were all we had in training against alcohol and the saloon, the 200,000, when grown up, would find

themselves in the same condition now facing us in many portions of our country, namely, a splendidly trained minority fighting against the odds of an unenlightened majority who believe in alcoholic liquors, drink them, and do not want their manufacture and sale abolished. If our education of the young were confined to the Loyal Temperance Legion, grand as that work is, our labors for a day when this whole people and land will be free from the slavery of alcohol would be almost hopeless. But we present to you a line of work through which we are educating not only a majority but all the children of this nation as found in its public schools to intelligent obedience to the laws of health, including those that teach the physiological reasons for total abstinence from alcohol and other narcotics.

The gravest incentives to Christian patriotism impel us to this effort. We are trying in this country a new and dangerous experiment. Other great nations are composed of one or at most two or three races, with similar tastes, tendencies and histories. The ancient Gaul is represented in the modern Frenchman, the German is a Teuton, the Russian a Slav, the Italian the descendant of the wolf-fed Romulus, the Englishman is a union of the Anglo-Saxon and Norman. But in the United States, a land with the boundless resources of all zones, God is evidently making a new race by mingling the blood of all peoples into one new type. Only a superficial mind will attempt to explain God, but he explains Himself in the story of the centuries as they unfold their history. This continent, hidden beyond the mysterious seas, was unknown to civilized man until it was time to get it ready for freedom-loving, God-fearing men and women who could be depended on to brave the wilds of a new world, stay here and become the nucleus of a great free nation. When that time arrived, Columbus came and the Spaniard. Here comes a representative of Spain bearing the flag of his nation.

Enter boy bearing a Spanish flag. He comes to the front of the stage.

Superintendent : The Spaniards, coming for gold and conquest, were out of harmony with the future destiny of this nation which from the beginning was dedicated to liberty. The Spaniard, left no permanent settlement in the United States, and they recently retired from Cuba, at our request, so that now Spain does not own a foot of land on the western hemisphere.

Enter girl bearing the flag of Holland. She stands beside the Spaniard.

Superintendent: First of all permanent settlers came the Dutchmen, Father Knickerbocker's ancestors, landing in this country even before the Pilgrims. Senator Depew says, "Holland, at a time when there was no light for man elsewhere in the world, preserved the principles of civil liberty. For a century Holland was the safe deposit company of the rights of men." Thus the Dutch had common ground with those who came next.

Enter, standing in line with the Spaniard and Hollander, boy and girls bearing English flags, representing England, Scotland and Wales.

Superintendent: This race brought with them the Bible, the fear of God, love of home, of fair play, and therefore trial by jury, and a genius for liberty. From the first, they seem to have been divinely chosen to dominate the new world, not so much by might as by right and conscience.

Enter an African boy taking his place in the ranks without a flag, thus representing a race without an established government of its own.

Superintendent: Next came a people of whom Booker T. Washington said, "The African is the only race especially invited to this country with an irresistible invitation." The wrong of that "irresistible invitation" to a land dedicated to liberty entailed four years of bloody war in which this country, as Lincoln said, "sank all the wealth piled up by the bondsman's two hundred and fifty years of unrequited toil and paid every drop of blood drawn with the lash by another drawn by the sword." The history of nations as well as of individuals echoes down through the centuries the divine mandate, "Whatsoever ye sow, that shall ye also reap."

Enter girl bearing French flag.

Superintendent: In those long ago days when the destiny of the country was being shaped, Louis XIV. was determined that the lilies of France should float over this land. But such was not the divine plan, and long, bloody wars drove the French legions farther north, and decreed that our country should be New England, the home of English-speaking peoples, instead of New France. The Huguenots stayed, giving something of French vivacity to the solemn strain of Puritan blood in the new race that was being evolved, and we must not forget that later France bravely helped in our struggle for national freedom.

Enter, joining the others, a boy bearing the green flag of Ireland.

Superintendent: Here comes the Irishman. What this country would have done for policemen, ward politicians, aldermen, and even mayors, if the failure of the potato had not driven the Irishman to our shores, who can tell?

Enter boys and girls with German flags.

Superintendent: Now comes the German, driven from the fatherland by revolution, bringing to us brain and brawn and, alas, beer.

Enter boys and girls bearing the flags of their respective nations as the names of their countries given below are called.

Superintendent: As years rolled by, the story of the wealth and liberty of this land beckoned great hosts from the revolutions and oppressions of the old world, and their people poured in upon us from Norway, Sweden, Denmark, Greece, Portugal, Belgium, Switzerland, Japan, China, Mexico, South America, Russia, Finland, Austria-Hungary, Italy, the Orient, and from every other country under the sun. Six hundred thousand, a real army of invasion, are coming to us this year, and still they come.

Can this mixed multitude be so permanently united in one great self-governing nation that it will withstand the stress and strain of time, is the burning question before us. Can we be so assured of the capacity for self-government of these many peoples from many lands that we may reasonably expect our republic, growing in strength and virtue, will survive a thousand years and more if the world shall stand as long?

Not unless alcohol is banished from the habits and traffics of its people, for alcohol destroys the capacity of man for self-government. It is its nature to dethrone in the human being that kingly quality of self-control without which a government of the people must perish.

Can alcohol be thus abolished? Yes. We depend upon education for the perpetuity of our institutions. A republic has no power with which it can compel majorities. It can only educate them to right choice and then depend on results. This nation has provided for the necessary education on this subject. The white map over our heads tells the story of the laws of this land requiring the 22,000,000 children in all its public schools to be taught, with the laws of health, the evil nature and effects of alcoholic drinks and other narcotics. As this teaching goes faithfully on, the power of alcohol is being weakened, and the drinking ideas brought from other lands are giving place to the teachings of the new world. The whilom immigrant rapidly becomes an American.

Turning to the ranks with their foreign flags, the Superintendent said, You are here, children, representing many nations. Are you now

Spanish, Dutch, English, French, German, Irish, and so on? What are you?

Instantly the children dropped their foreign flags, and waving the stars and stripes which heretofore they had held down at their sides, in loud and clear voices they shouted altogether, "We are Americans!" Then, led by the piano, and keeping time with the flags, their strong young voices rang out:

"My Country, 'tis of thee,
Sweet land of liberty," etc.

At the close of the song, enter a tall figure, dressed in star-bespangled coat and vest of blue, pantaloons of striped red and white strapped under his feet, and a bell-shaped hat with broad star-decorated band, a veritable reproduction of the tutelary genius of the Republic, Uncle Sam.

Approaching the front of the stage, he shook hands with the Superintendent and turning to the children said:

These represent the children of my 75,000,000 people. They are my future men and women.

Then turning to the Superintendent and delegates, he said:

I want to thank you for helping me get the order on my statute books requiring the millions of children in my public schools to have a temperance education. My people will make laws in favor of saloons until they are taught better, and if they are not taught better the saloons will destroy my government of the people, so we must hurry up this temperance teaching. While I thank you, Woman's Christian Temperance Union workers for scientific temperance, for what you have done, I bespeak your co-operation in keeping unweakened these laws on my statute books and in getting them well enforced, especially in the lower grades of my schools, because so many of my future men and women early leave school to go to work. If you will drill temperance truths into the heads of my little folks and young people, we shall keep the stars and stripes floating over

this land for all time, and make it truly "the land of the free and the home of the brave."

Superintendent, turning to Uncle Sam: In behalf of the Scientific Temperance Instruction Workers in the Woman's Christian Temperance Union here present, and in all your great land from ocean to ocean, from the lakes to the gulf, and in your new possessions, for these workers are everywhere, we solemnly pledge you to work without ceasing for this education for all the children, and, especially, as you ask, for those who early leave school to enter your workshops and fields, that thus, ere many more

decades shall pass, your flag shall float over a land of people free from the alcohol bondage and without saloons.

Then, taking Uncle Sam's proffered arm, they left the stage, followed by the children waving flags and singing the "Star Spangled Banner."



"On turf and curb and bower-roof
The snow storm spreads its ivory woof"

Announced by all the
trumpets of the
sky,
Arrives the snow, and,
driving o'er the
fields,
Seems nowhere to
alight: the white
air
Hides hills and woods,
the river, and the
heaven.

—Emerson.

THE LITTLE NEW YEAR

Oh, I'm the little New
Year, oh, ho!

Here I come tripping it over the snow,
Shaking my bells with a merry din,
So open your doors and let me in!

Blessings I bring for each and all,
Big folks, and little folks, short and tall,
Each one from me a treasure may win,
So open your doors and let me in!

For I'm the little New Year, oh, ho!
Here I come tripping it over the snow,
Shaking my bells with a merry din,
So open your doors and let me in!

—Songs and Games for Little Ones.



Primary Lessons

SECOND YEAR

SOME NEEDS OF THE BODY

HOMER says of certain of his heroes that "not without good right do they eat the fat and drink the sweet, for they fight ever in the front."

From Homer's day to this, his statement has held true. If we want to get the most out of our bodies, we must put only the best materials into their making. The same inexorable law pushes the beer-drinker and the cigarette fiend far to the rear. They have invested little capital in their bodies and must be content with a proportionately small income. American life is the most strenuous in the world. The newly landed immigrant finds he must count for two and a half times as much here as at home to equal our native workmen, and almost invariably he fails. But there is hope for his children, and it is they whom the schools are trying to reach. If they win their way to the front with other heroes, it will not be because life has been made easy for them, but because they have been made strong enough to grapple with it successfully.

(1)

PURE AIR

The child, like the adult, must realize for himself the needs of his body before he will take steps to supply them. Hunger shows him at the outset that food is necessary, and he loses no time in trying to get it, but the need of oxygen is not always apparent. For this reason he should be so accustomed from infancy to pure air that he will be uncomfortable without it.

This responsibility lies mainly with parents and teachers, but the child's own co-operation is important and the lessons which follow are prepared with this end in view.

CLASS TALK

How does the house look at home after peo-

ple have been working in it all day, and children have been running in and out? What does Mamma do to make it sweet and clean again?

Each of you has a little house of your own to take care of. You carry it around with you all the time, just as a snail does his shell. What is the name of this little house? Write the word, body, on the board.

Point to this little house of yours. Does the outside of it ever get dirty? What do you do then? How often does your face need washing to keep it clean? Your hands? The rest of your body?

Perhaps you will be surprised to know that the inside of your body needs to be kept clean as well as the outside. We can not wash this with soap and water, so we have to keep it clean in some other way.

You know how you air your bedrooms at home every morning, opening the windows so the sweet pure air from outdoors can blow in, and all the impurities can blow out. We take air into our body houses for the same reason, and besides keeping them clean on the inside it helps to keep us alive. Nobody could live very long if he did not have plenty of air to breathe.

Find the little windows which let the air into our bodies. How many are there? There is a door, too, that can be used when we need an extra amount of air in a hurry, or when we have colds and it is hard work to open the windows, but is always better to use the windows when we can. That is what they are for.

ACTION STORY

Stephen and Rachel were flattening their noses against the window watching for Uncle Ned. (Peer out through thumb and fore finger)

"Here he comes!" they shouted, (Clap hands joyously) and both children ran to meet him as he came up the steps. (Fingers run on desk)

They did not want to go to bed at all that night, (Shake head) but Uncle Ned said he would go up stairs (Climbing motion with fingers) with them and sing them to sleep.

"I wish I could sing like you," said Stephen. (Clasp hands eagerly) "Do you suppose I can when I am grown up?"

"Perhaps you will sing better, but you must learn how to breathe first. You and Rachel stand up in front of me and I'll show you how. (Class rise and imitate motions of teacher)

"Put your hands flat on your chest, and see how high you can raise them when you breathe in. All ready, now. One, two, three.

"That was too fast. You could not sing a line without taking breath at that rate. Try again, and don't get ahead of my count.

"Bravo! Now try a new exercise. Stand squarely on both feet, arms at the side. Raise arms at sides as high as your shoulders and breathe in while I count. Slowly, now. One, two, three.

"Rest a minute. Now try again, lowering arms to your sides and breathing out. Play you are pushing something down. Ready, now. Breathe in. One, two, three. Breathe out. Three, two, one.

"Now I will sing your favorite 'Wynken, Blynken and Nod,' for you to go to sleep on, and tomorrow night we'll have another lesson."

POINTS TO REMEMBER

Pure air helps to keep us alive.

It keeps the inside of the body clean.

It gets into the body through two little windows in the nose.

We should breathe through the nose instead of the mouth.

(2)

FOOD

Early knowledge of what food does for the body is necessary that the child may choose what is best for his body, instead of eating only for the momentary gratification of his sense of taste.

CLASS TALK

Find whether any of the children have seen a garden being made, or have helped to make one themselves. What was the first thing to be done? Why is the gardener careful to have good rich soil? to give his plants plenty of water? to keep them free from weeds?

Each of us has something to take care of and make grow, something a good deal more important than any plant. What is it? Our bodies.

These are not planted in a garden like corn and potatoes. They are free to run about wherever we like, so they need very different care from plants. Who can tell one thing they must have?

Write the word, food, on the board. What would happen if we should stop giving our bodies any food? If we should give them only a little?

If we want tall, strong bodies we must give them all the food they need, but if we eat too much it may make them sick and so stop their

growth. How can we tell when they have had just enough? We have a good little servant who always lets us know. His name is Hunger. When he leaves us, it is time for us to go away from the table and stop eating. If we nibble between meals we keep our bodies at work all the time. They do not like such treatment.

We should get very tired of eating only one kind of food, so there are many kinds we can have. Name some foods that grow in the ground; on top of it; on trees; bushes; some foods that come from animals.

Ask the children to tell what they would like for breakfast, dinner and supper. If a poor selection is made in any case, tell why it is not good for the body, and substitute something else in its place.

READING LESSON

A gardener spades up the ground and makes it very soft and fine before he sets out his plants.

He gives them good rich soil to grow in and plenty of water to drink.

He pulls up all the weeds, so his plants will have room to grow.

We have our bodies to take care of. They are worth more than any plant.

Our bodies need food to make them grow tall and strong.

If we did not eat at all, our bodies would starve and die.

If we do not eat enough, they will not grow so well as they ought.

If we eat too much or too often, they will have to work too hard.

When we are no longer hungry, it is time to stop eating.

(3)

DRINK

Even stronger than the desire of food is that of drink. For this reason the child can not know too early in life what drinks to choose and what to avoid.

CLASS TALK

Read aloud or recite parts of Tennyson's "Brook" or Southey's "How the Water comes down at Lodore." Ask where a brook comes from; where it goes; what it is good for; why we like it.*



"Here he comes! they shouted."

*See picture on page 73

What do we give our plants when the leaves droop and the soil looks hard and dry? How do they look after they have had a good drink?

Tell the children that a large part of our bodies is made up of water and that the body needs water every day in order to do its work. This is what makes us thirsty so often.

Where does our drinking water come from? Make the class familiar with the sources of the town or city water supply, whether river, lake, or reservoir, taking them to visit it at some time during the year.

There is another good drink which is a food as well. What is it? Write the name, milk, on the board. Ask where it comes from, and help them to trace its source back to the cow.

Find what other drinks are familiar to the class, and in what light each is already regarded by them. Classify tea and coffee as drinks for grown up people, not for children, and soda waters, lemonades, etc., as treats rather than drinks for every day use. Who can give a reason?

Bring out the cost as one objection. It is not right to spend much money on things which please us only for the moment. Also such drinks are often stale and so not good. Contrast with water which costs nothing and is just what the body needs.

If beer, wine, cider or other alcoholic drinks are named, tell why each is dangerous both to children and grown people.

Show fruits and grains from which such drinks are made. These are good food for everybody. Press out a little fruit juice. This is good too, but after it stands awhile, as it always does when it is to be made into a drink, it is spoiled for food. A bad substance, alcohol, is formed in it which has the power to hurt people, so we should never touch such drinks.

POINTS TO REMEMBER

Water keeps plants and flowers alive.

A large part of our bodies is water.

We need water to make our bodies grow and to help them do their work.

It is the best drink for everybody.

Milk is a food as well as a good drink.

Tea and coffee are not good drinks for children.

Lemonade and soda waters are not the best drinks for everyday use.

Beer, wine and cider are bad drinks. We will let them alone.

(4)

CLOTHING

Cold weather makes the need of clothing

very apparent to the child and is thus a favorable time for class work on this topic.

Show the picture of the snow baby reproduced on page 71 and tell the story of

LITTLE AH-NI-GHI-TO

The baby girl with this very long name was born hundreds and hundreds of miles away in the land of the Eskimos. Those queer little brown people had never seen a white baby before, and many of them came a long way to see her. How do you think Ah-ni-ghi-to was dressed when she was big enough to go outdoors? She would freeze to death in such clothes as you have on when you go coasting or snowballing.

She wore a little Eskimo suit made all of fur. It was in two pieces, a fox skin coat with a hood, and deer skin trousers fastened to her ankles with a draw-string. Fur boots were sewed to the trousers, and in this warm dress she could play out in the dreadful cold just as if she had been a little polar bear. But even in that cold land it gets too hot for furs in the summer time, so then these were put away, and Ah-ni-ghi-to wore woollen gowns, and a little sunbonnet to keep her face from getting burned.

When she was a little older she came home to this country to live, and now she dresses just as you do.

LESSON TALK

Why did little Ah-ni-ghi-to wear fur clothes? How were they made? How were they different from ours?

Get the children to tell how and why their own dress differs in summer from that worn in winter? Who wore Ah-ni-ghi-to's dress before she did? Where does our clothing come from?

Name different articles of clothing in the room; coats, dresses, shoes, stockings, and tell the children the material of which each is made, if they do not know already.

What shall we wear on our feet in wet weather? Explain why rubbers are better than leather shoes for such wear, and also why these should not be worn in the house.

How shall we take care of our clothes? Every child who is well brought up at home will have something to add on this point, and the others will learn much from them. Tell why the same clothes should not be worn both day and night, but be given a chance to air.

(5)

SHELTER

No matter how warmly dressed he may be, the child soon learns that additional protection is needed against cold and storms. Thus the

next topic is naturally the home, what it does for him, and what he should do for it in return.

CLASS TALK

Choose a stormy day for this lesson, one on which all the children will be glad to be indoors. Call attention to the fact that they have on warm clothes, and ask if these would keep them comfortable if they had to eat, sleep and live outdoors. What else is needed?

Show pictures of homes in different lands, palaces of the wealthy, peasant's cottages, the Indian's wigwam, the snow hut of the Eskimo, the broad verandas of tropical houses. Get the children's ideas of each as they look at the pictures. Supplement their statements as may be necessary to give them a good general idea of the differences in houses in warm and cold countries, and also among civilized and savage peoples.

Sketch on the board an attractive house, and tell the children to play that it belongs to them. It is just being built, so we can have it just as we like. What rooms shall we have in this house of ours? Write the name of each on the board as it is given.

Of course we must have a kitchen. What for? What furniture will be needed here?

What is done with food after it is cooked?

What do we call the room in which we eat? What do we need in our dining-room?

Go through all the essential rooms of a house in the same way, not forgetting the bathroom and cellar, and have the children furnish each in imagination, after telling why such a room is needed.

A home does a great deal for us. It protects us from cold and storms, and it gives us a place to live. What can we do in return? We do not want to get all this for nothing.

Give each child a chance to answer. The question may perhaps be left on the board a day or two while all think of ways to make home pleasant and happy. Write each answer on the board as soon as given, and read the entire list over occasionally with the children.

READING LESSON

Our homes keep us warm in winter.

They keep off the hot sun, and rain and snow.

They give us a place to eat and sleep and entertain our friends.

In return, we can help to keep the home neat and tidy.

We can clean our feet every time we go into the house.

We can put everything in its place when we are through with it.

We can play quietly in the house and not disturb others.

We can shut doors after us without banging them.

We can be careful not to break or spoil anything in the house.

We can run errands pleasantly.

We can help Papa and Mama.

JACK FROST

Who makes our Tommy's nose so red?
Nips his hands if he draws his sled?
Bites his toes when he goes to bed?
Jack Frost.

Who paints his cheeks and nips his ears?
Who from his eyes draws big, round tears?

Who comes to see us every year?
Jack Frost.

Who covers window panes at night,
With picture castles all in white?
But always keeps quite out of sight.
Jack Frost.

Whom do the boys all love to greet,
As he comes creeping down the street?
They know his coming means a treat.
Jack Frost.

And who skips up the chimney wide,
To find a place in which to hide,
When we sit around the fireside?
Jack Frost.

—ALICE LOTHERINGTON, in *Kindergarten News*.



Little Ah-ni-ghi-to *



Grammar Lessons

FIFTH OR SIXTH
YEAR

THE ORGANS OF BREATHING

"God ne'er dooms to waste the strength
He deigns impart."

CHILDREN, even in royal nurseries, are not intrusted with costly playthings until they are old enough to appreciate and use them carefully. But the human body, which is infinitely more valuable than any toy, is given to each of them at birth, and they have to find how to take care of it by actual experiment on the thing itself. If one makes a mistake and spoils it the damage is irreparable. He can not throw it away and buy another for there is nothing like it in all the world.

Early instruction, therefore, in the uses and care of this wonderful piece of mechanism is more needed than in any other subject. The child must study the body as a whole and the workings of its various parts; he must learn what will promote its well being and what must be shunned because of the possibility of harm; and he must begin this work in early childhood before he has formed habits which he may have to reform.

The lessons on the human body which have been selected for this month deal with one set of organs for purifying the body. It has been well said that "our own breath is our greatest enemy." It is also an enemy that can not be defeated and driven off once for all. Every-body must face its attacks many times a minute as long as he lives. Our hope of safety lies in making these attacks harmless by flooding our lungs and houses with pure air and sunshine.

In lower grades, pupils have learned how air gets into the lungs, and something of its work there. They need now to amplify these topics, and in addition to study the organs with which we breathe, their position, size, shape and fitness for work, the relation of this work to health, and how their efficiency may be increased or diminished by the way we live and the care we take of them.

LOCATION IN THE BODY

Stand facing the class and breathe slowly and deeply several times, while they watch to see what parts of your body move. Repeat, standing sidewise, and again with your back towards the class to give all points of view.

What part of your ribs moves? In what direction? What keeps the ribs from moving at the back? Show from the chart how they are attached to the backbone.

Provide a tape measure and have the pupils find how much they can increase their chest circumference by taking a full breath. Give the name, thoracic breathing, to this outward movement of the chest. Why is it so called?

Have the class sketch the bony framework of the chest as it appears in inspiration and again in expiration, explaining how and why the two drawings differ.

Let dotted lines indicate the position of the lungs, bronchi, trachea, and nasal passages in each drawing. Text-book study of the physiology of all the breathing organs will necessarily precede this work, and books may be consulted afterward to make necessary corrections, but should not be allowed while the drawings are being made.

Ask what supports the lungs at the bottom, and have the diaphragm added to the drawings. Again take a full breath, asking the class to watch especially the movements of the abdomen, until they can describe the same.

Give the name, abdominal breathing, to that caused by the lowering of the diaphragm. In what different way is the chest enlarged by abdominal breathing than by thoracic? Why are both kinds necessary?

What neighbors have the lungs above the diaphragm? Have the class point out the location of each of these organs in their own bodies, and then estimate the proportionate amount of space in the trunk that is taken up by the breathing organs. What does this show as to their relative importance?

RELATION TO HEALTH

Contrast the appearance of even the neatest schoolroom in the morning and at night after the day's work is over. Do the same with the home kitchen or some well known workroom, bringing out the thought that no kind of work can be done without leaving some waste or refuse behind.

Call for examples of work done in the body; *e. g.* the constant beating of the heart; the digestion of food, the growth and repair of the different organs. None of this work can be done without waste, and if this is not got rid of we get sick.

What do we call the people who remove waste from our houses and cities? The breathing organs are one set of scavengers for the body.

Let the class find by experiment what kinds of waste are carried off by these organs. Have some one breathe through a piece of tubing into a glass of lime water. What change takes place in the water? Explain that there is only one thing which turns lime water milky, carbonic acid. Have different ones breathe on pieces of cold glass. How does this make the glass look? Name this second impurity given off through the lungs. How does a room smell after it has been shut up for some time with people in it? This close stuffy odor shows that worn-out particles from the different organs of the body, organic particles we may call them, have been given off from the body through the lungs. Have some one write on the board these three kinds of waste matter which the breathing organs are constantly throwing off—carbonic acid, water, organic matter. Find how each is harmful to the body.

Examine the veins on the back of the hand. What color is the blood in them? What color is the blood when a vein is cut? Give the reason for this difference in the color.

The heart is all the time sending the impure blood of the body to the lungs. There the oxygen we breathe purifies it, and so changes its color from dark purple to bright red, just as it does in a cut where we can see the change.

In this way the organs of breathing are feeders of the body as well as scavengers. Write the name of the substance they supply opposite those waste matters which they remove.

Find how many in the class ever cured a headache by going outdoors. How many have found that they can get a lesson better after recess than just before? How many have ever felt sleepy in church? Call for the reason in each of these cases.

It is estimated that every person ought to have 600 cubic feet of room and to have all the

air in this changed five times every hour. Have the class find how many cubic feet in their schoolroom there are for each pupil, and how often it will have to be changed to meet this standard. Have all find out the same in regard to their sleeping rooms at home. Ask each to suggest a means of ventilating, and have the best written on the board.

INJURY FROM ALCOHOLIC DRINKS OR TOBACCO

Insistence upon an abundant supply of pure air in the schoolroom and home, until the youth feels its lack at once when deprived of it, is a long step towards keeping him from the use of tobacco and other narcotics. But precise knowledge of the way in which these substances harm the breathing organs and interfere with their work is also necessary.

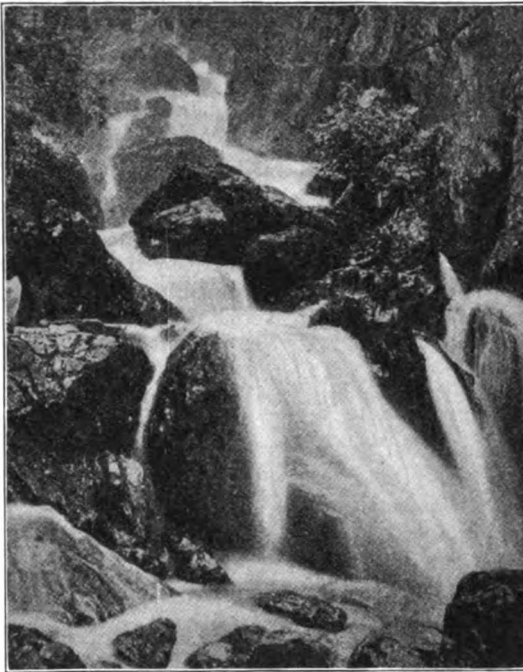
Introduce such facts when discussing each of these topics. When the class learn that the breathing organs furnish the whole body with oxygen which it must have or die, see that they learn also that tobacco and drinks with alcohol in them pollute this necessary oxygen and lessen the amount which the body gets.

In the same way, as soon as they find that the breathing organs are necessary scavengers of the body, make sure that they learn how this work of removing

waste is hindered by the use of alcohol or tobacco.

When they study the delicate structure of the breathing organs, and remember from experience how the throat looks and feels when one is suffering from a cold, have them find how smoking and drinking affect these organs.

Two of the most dreaded diseases in every community are pneumonia and tuberculosis, and both are diseases of the breathing organs. If the body is kept constantly supplied with oxygen, and if its waste matter is promptly got rid of, the system ordinarily will be too strong and healthy to allow the microbes of either of these diseases any foothold. Why is the smoker or drinker more likely than others to contract tuberculosis or pneumonia, and having contracted either less likely to get well?



"Never ending, but always descending.
The water comes down at Lodore."

Refer the class constantly to their books in considering these questions, to the authoritative quotations which follow, and to all other available sources. The thought to be left with them is that if it is worth while growing up to manhood and womanhood at all, it is worth while trying to be the very best possible men and women; it is worth while to put the best materials into the building of their bodies and minds, and to leave out everything which weakens and degrades.

AUTHORITATIVE QUOTATIONS

ALCOHOLIC DRINKS INJURE THE RESPIRATORY SYSTEM

BY CHECKING THE REMOVAL OF WASTE

Purity of blood encourages health; its impurity encourages disease. Whatever lessens the normal amount of oxygen cripples the functions of the body.

Nearly all experiments have shown that under the influence of alcohol the normal amount of carbon dioxide exhaled by the lungs is decreased.—J. W. GROSVENOR, M. D., Buffalo.

BY ROBBING THE SYSTEM OF OXYGEN

Alcohol robs the system of oxygen, and a man suffers from disease in proportion to the amount of alcohol he consumes.—DR. ALLINSON in the *Temperance Record*.

BY ACTING AS A RESPIRATORY POISON

Alcohol should be regarded as a respiratory poison, because it interferes with the interchange of the gases of the entire body by disturbing the normal life processes of the individual cells.—AUGUST SCHMIDT, M. D.

Its [alcohol's] effects upon the lung tissues, and the nerves supplying the same, have led some writers, very appropriately, I think, to denominate it a respiratory poison.—D. R. MANN, M. D.

BY FAVORING TUBERCULOSIS

The public house is the purveyor of tuberculosis. In fact, alcoholism is the most potent factor in propagating tuberculosis. The strongest man who has once taken to drink is powerless against it.—PROFESSOR BROUARDEL of Paris.

TOBACCO INJURES THE RESPIRATORY SYSTEM

BY IRRITATING THE MUCOUS MEMBRANE

Cigarette smoking irritates and poisons the mucous membrane, perverting its action, affecting digestion, the brain, heart, lungs and liver, shatters the nervous system, and ruins body and mind.—B. BROUGHTON, M. D.

BY PRODUCING INFLAMMATION OF THE THROAT

One of the commonest effects of indulgence in tobacco is a chronic inflammation of the throat and upper respiratory passages, leading to hoarseness and excessive secretion of the mucous glands.—ARTHUR R. CUSHNY, M. A., M. D., Professor of Materia Medica and Therapeutics, University of Michigan.

BY IRRITATING THE LUNG TISSUE

I consider cigarette smoking one of the most harmful ways of using tobacco. The smoke from the cigarette is not so strong as from the cigar or pipe, and it is in this way often that the habit is started; the smoke being mild and not so irritating, it is usually inhaled into the lungs. In this way not only the lung tissue is irritated, but the poisons from the tobacco directly enter the blood and are carried to all parts of the system.—N. S. MACDONALD, Principal of Richmond Hill Public School.

BY CAUSING INHALATION OF CARBON DIOXIDE

Through nicotizing the blood, as well as vitiating it by the inhalation of carbon dioxide and other substances contained in the smoke, cigarettes seriously impair general nutrition.—CHAS. L. HAMILTON, M. D.

BY CAUSING CATARRH

Even in those who are used to it, tobacco smoke may produce catarrh of the pharynx.—WHITE & WILCOX's *Mat. Med. and Therapeutics*.

BY PRE-DISPOSING TO DISEASE

The catarrhal disturbances of the air-passages render the smoker more liable to dangerous and fatal diseases of the air-passages. Every case of laryngeal tuberculosis coming under my observation for several years has presented a history of the victim being a smoker, in the majority of instances to excess.—I. N. LOVE, M. D.

WHERE FIELDS LIE WHITE

Where fields lie white beneath the snow

The grasses sleep.

Here cold wild winds of winter blow.

Yet soon will April raindrops weep

And happy sea born breezes go

Singing landward, soft and low,

Where fields lie white beneath the snow.

Still listening for the call they know

Life's mysteries are,

Here by the water's ebb and flow.

Yet, soon each grass blade scimitar

Shall taper, slim, toward skies that glow,

In joyance waving to and fro,

Where fields lie white beneath the snow.

—ELLEN BRAINERD PECK, in *Town and Country*.

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OUR DEBT TO HONEST SCIENCE

FROM the earliest ages people have liked alcoholic drinks, and thinking them harmless if moderately taken, have drunk them. The moderate use having the power to create the immoderate, drunkenness and demoralization follow. Thus a false premise concerning the nature and effects of alcohol is the root of alcoholism, the greatest menace facing modern civilization. The correction of this false premise, the first step toward the removal of this curse, waited for the advent of modern experimental science.

There never lived a more able and conscientious scientific investigator than Sir Benjamin Ward Richardson, M. D., LL. D., F. R. S., F. R. C. P. At a medical conference in Oxford, in accounting for his experiments to find the real nature and effects of alcohol, he said :

"For my own part I was ignorant, and that is why I sought for certain knowledge. To the research I devoted three years, namely, from 1863 to 1866, modifying experiments in every conceivable way, taking advantage of seasons, extending observations from one class of animals to another and making comparative researches with other bodies of the alcohol series than the ethylic or common alcohol.

"The results I confess were as surprising to me as to any one else, from their definiteness and uniformity. They were most surprising for the complete contradiction they gave to the popular idea of alcohol."

At another time he said :

"I learned purely by experimental observation * * * that alcohol can not by any ingenuity of excuse for it be classified among the foods of man. It supplies matter neither for construction nor heat. On the contrary, it injures construction, and reduces temperature."

In reply to the question if his experiments did not reveal evidence of some good service as

well as bad rendered by alcohol as a beverage, he replied :

"I answer that question *that there was no such evidence whatever and is none.*"

He and others learned from experimental science that alcohol is not only not a food but that it is a narcotic poison, having the power even when taken in small quantities to create an uncontrollable and destructive appetite for more. Hence no one can be sure that its moderate beverage use will not end in alcoholic enslavement of the user.

When great events are passing, men seldom recognize them as great and destined to powerfully influence the future. We are yet too near these experiments to comprehend their full meaning, but when the perspective of time shall reveal the relation of cause to effect in human betterment, the historian of our civilization will cite as epochs in the emancipation of the race from its greatest enemy these discoveries of Sir Benjamin Ward Richardson, followed by those of Drs. Adolf Fick, Emil Kræpelin, A. Forel, Gustav W. Bunge, J. Gaule, and E. Destree in continental universities, of Dr. N. S. Davis in our own country, and others who through experimental science have revealed the real nature and effects of alcoholic drinks.

As the drink problem has its roots in the idea that a moderate amount of alcohol is harmless, the testimony against it as a beverage in all forms and amounts by these honest searchers for scientific truth recalls what the historian, Hallam, said of a certain victory over the invading Saracens: "It may be justly reckoned among the few battles of which a contrary event would have essentially varied the drama of the world."

Dark would be the world's drama of the twentieth century if these men had juggled with the findings of their laboratories to condone the beverage use of "two and one-half ounces of alcohol per diem," as suggested in the reports of Prof. Atwater's experiments. To have done that would have been a crime against humanity without parallel, involving national disaster, for the strength of the nations is that character of the people which it is the nature of alcohol to destroy.

The manner of this country in dealing with these discoveries as contrasted with that of Europe is a good illustration of the saying of the dean of one of our industrial colleges, "It is preeminently an American tendency to apply knowledge as soon as acquired." While our brothers across the ocean were filing away in scientific alcoves the reports of these discoveries, we have put them into progressive manuals of instruction adapted to all grades of our public schools, and have enacted laws

making the study compulsory for all pupils in these schools throughout our entire country.

Many previous temperance agitations from a moral standpoint have, in a measure, prepared our people for the strong testimony of science against alcoholic drinks which our children are now learning. Nevertheless, I have said from the first, this teaching must be invulnerable, for the time will surely come when it will be challenged point by point by old ideas backed by appetite and the avarice that fattens on meeting the demands of appetite. That the challenge did not come sooner is due to the fact that the work has gone quietly on without the blare of trumpets. On June 13, 1899, the challenge was thrown down by Professor W. O. Atwater, in declaring that this beneficent teaching in our public schools, Sunday schools and pulpits should be changed to teach, as he claimed he had proved, that two and one-half ounces of alcohol per day is food.

The newspapers of this country were flooded with the statement that alcohol in amounts equal to one bottle of Rhine wine or three glasses of whiskey per day is food. But not until nearly six months after did he publish the history of his experiments showing whether he really did prove this and how he did it.

Circular 357 accompanying the bulletin describing his experiments distinctly said, as the newspapers had been saying for six months, that the experiments now published in Bulletin 69 proved that alcohol, when substituted in the daily diet of the men experimented on, protected the material of the body from consumption just as effectively as corresponding amounts of sugar, starch and fat, the inference being that therefore alcohol is a food. But in point of fact, the results of those experiments tabulated in Bulletin 69 show that, instead of protecting the material of the body like sugar, starch and fat, alcohol did no such thing, but acted instead as a protoplasmic poison.* Thus failed this much vaunted attempt to prove the scientific temperance instruction in our schools false.

The secular press just now seems to be missing the point in the latest controversy over this question. The people of this country whether in the Methodist church or out of it are not objecting to Professor Atwater's experimental search for evidence that alcohol is or is not a food. Every one says let him or others search

all they can, but they must not try to deceive us about what they find. Nobody is persecuting Professor Atwater. What the public demands is that the popular report of the findings of such experiments shall tally with the actual facts recorded in the tables that tell just what happened to the men in the calorimeter, when instead of sugar, fat and starch in their diet they took a daily equivalent of two and one-half ounces of alcohol.

The immortal Lincoln said, "You can not fool all the people all the time." The American people have not much use for the man who attempts it. While they are gratefully open-minded to every new truth that leads to stronger, truer lives, they know that to teach that moderate drinking is harmless, or to repeal or weaken our temperance education laws, would be to invite physical, moral, and economic disaster.

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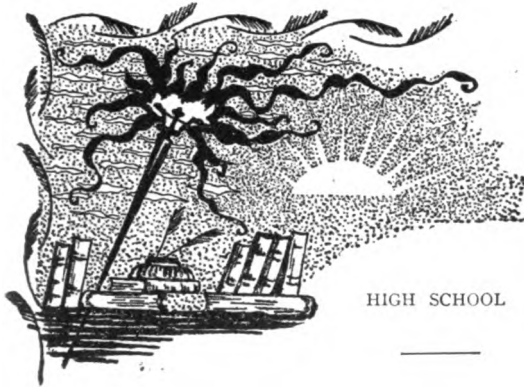
CONDITIONS

Each story, poem, humorous article, or oration must contain at least 800 words, and not more than 1,400, and must never have appeared in print. All manuscripts must be sent to the undersigned by June 1, 1903; and each must be accompanied by \$1.25, for which money a copy of the department book, *Alcohol, a Dangerous and Unnecessary Medicine*, will be sent to the address given by the contestant. Prize winners will be announced in the *Union Signal*. A committee of three judges will decide upon the manuscripts. Writers are expected to show the danger of the home prescription of alcoholics as well as the professional.

(MRS.) MARTHA M. ALLEN,

Supt. of Non-Alcoholic Medication for National
W. C. T. U., 348 Delaware St., Syracuse, N. Y.

*See testimony of Professors Seneca Egbert, A. M., M. D., Professor of Hygiene in the Medico-Chirurgical College of Philadelphia; Frank Woodbury A. M., M. D., Fellow of the College of Physicians of Philadelphia, Associate Professor of Laryngology in the Philadelphia Polyclinic and College for Graduates, formerly Professor of Materia Medica and Therapeutics in the Medico-Chirurgical College of Philadelphia; Winfield S. Hall, Ph. D., M. D., Professor of Physiology, Northwestern University School, Chicago; and C. A. Herter, M. D., Professor of Pathological Chemistry, University and Bellevue Hospital Medical School.



EXCRETION

CLOSELY linked with the nutrition of the body is the disposal of its waste products. One is as vital to health as the other, but while a person can live several days without food he could not live twenty four hours if all the waste matter formed in his body during that time were retained within it. For this reason, the problems concerned in excretion are even more important hygienically than those involved in the selection and preparation of food.

It is desirable to take up both these topics in natural sequence, studying first the functions of food in renewing the tissues and storing up energy in the body, then the elimination of waste matters formed as a result of the setting free of this stored-up energy. In the lesson which follows, this order is observed, and it is assumed that the subject of food has already been considered by the class.

ORIGIN OF WASTE MATTERS IN THE BODY

Waste is everywhere one result of energy, for no work can be done without the wearing away of some particles of matter. But where does energy come from? Let this be the first research question for the class, or for review, if it has already been taken up under food.

Give time for full consideration and discussion of the ideas presented, taking care that in the last analysis each source of energy is traced back to the heat and light of the sun, whether in plant and animal life, water power, or coal.

As special topics for further study, ask the class to find how plants get energy from the sun and what they do with it; how man uses the energy stored up in plants; and finally, how it is set free in his body, and in what forms. What does he do with it?

These topics show clearly the origin of waste in the body; that it is the ashes which are left as a result of the combustion of the tissues. In what parts of the body will waste be found?

Compare the tissue cells to the separate buildings in a city each of which contributes its share of ashes and refuse. How is this waste removed from all parts of the city? From every tissue of the body?

Trace the course of these impurities with the lymph and blood until each is finally eliminated, comparing again with the best sanitary provisions in vogue in a city. Show that in both cases the waste is sifted, picked over, every useful particle saved, and only that which is of no possible use is cast out.

THE ORGANS OF ELIMINATION

Have drawings put on the board of the lungs, kidneys, and a section of the skin. After finding what waste substances are removed by each, study the several processes until these can be clearly explained by diagram. Use the lime water test, exhaling several times through a glass tube into a bottle of lime water, to show that carbon dioxide is given off from the lungs. Breathe on a mirror. What waste product is thus indicated? Examine through a microscope solid particles which can be rubbed off the skin. How does their appearance show that these are no longer of use to the body?

Get a sheep's kidney from the market. Find the tubes which lead into and out of it, and identify the veins, arteries, lymphatics and the ureter, tracing each to its finest subdivisions in the kidney. Examine the structure of the kidney, and find reasons for the cortical part, the large number of tiny tubes, the epithelial cells, and the connective tissue. What separate function does each have? Make a similar examination of a chicken's lungs, noticing how these differ in structure from the trachea and bronchi. Why are not all parts of the respiratory system alike in structure?

Study the skin with regard to its function as a heat regulator of the body, as an organ of sense, of protection, of respiration, of absorption, of secretion and of excretion, and find how it is perfectly adapted in its make-up to each of these widely varying kinds of work. Make drawings of a sweat gland. Notice the tortuous course of these tubes. Why are they not perfectly straight?

Call attention to the fact that the body waste which has been studied thus far is mainly liquid or gaseous in character; but waste solids also are continually being formed, as undigested bits of food and worn out particles of the intestinal tract. Owing to their bulk, these must be provided for in a special way, namely, the large intestine. Why is this unlike the small intestine in structure? Give a reason for this difference.

RELATION OF EXCRETION TO HEALTH

Suggest that the class find and report on the condition of the machinery in any up to date manufactory. Why is every bit of metal kept oiled and polished to the highest degree of perfection? How would dirt on any part interfere with its action and lessen its value? Answer the same questions regarding the complex workings of the body, and decide why an excretory system is necessary to health, and why these different outlets for impurities must always be kept open and able to work easily.

Compare the excretory system also to the drainage of a country and to the sewage of a house or city, pointing out how much more complex it is than either, and so proportionately liable to get out of order if neglected.

The main facts of personal hygiene should already be known to the class. If so, study rather the scientific and physiologic reasons which underlie them. For instance, *why* good circulation aids elimination of waste, and why exercise promotes circulation; why a rich or an unnutritious diet gives one a muddy complexion; why daily action of the bowels is necessary.

Preventive measures are as important as hygienic in the care of the excretory organs, and should be studied from the best authorities. Have the class find what doctors have to say as to the action of alcoholic drinks and tobacco on the kidneys and lungs; as to the relation of one or both of these narcotics to dropsy, Bright's disease, and consumption.

Divide the class into two sections, asking the first to find out and report as to the effects of narcotics upon the structure of the excretory organs, and the other to study their effects upon the work done by these organs, explaining the reasons in each case. The appended authoritative quotations should be consulted freely, and the statements made by these physicians compared with those in their text-books and with the opinions of reputable doctors whom they may know personally.

AUTHORITATIVE QUOTATIONS

ALCOHOL CAUSES RETENTION OF WASTE IN THE BODY

Alcohol readily finds its way into the blood, impoverishing it, without itself undergoing any chemical change, and before it is eliminated by the skin, kidneys, lungs, etc., setting free fatty and other matters, diverting the oxygen of the blood and causing the retention of waste matter, urea, etc., which ought to be carried off from the body.—D. H. MANN, M. D.

ALCOHOL BOTH A TISSUE AND FUNCTIONAL POISON

There is not a tissue in the body which is exempt from the subtle and undermining influence of alcohol. It renders the system liable to all sorts of diseases. * * * It impairs at first the functions of the liver, kidneys, stomach, brain, heart and lungs, and later, it ruins these organs themselves.—J. D. MISHOFF, M. D., Milwaukee.

The kidneys are the organs that suffer more frequently, and usually most severely from the ingestion of alcohol; their action is, therefore, soon interfered with in removing the ashes from the blood.—E. CLAUDE TAYLOR, M. D., F. R. C. S.

ALCOHOL A CAUSE OF KIDNEY DISEASE

Glaser, working under von Jaksch, made 106 observations on 15 individuals and found that alcoholic drinks in relatively moderate quantities showed their irritating effect on the kidneys by the presence of leucocytes and casts, and uncommonly large numbers of crystals of oxalate of lime and uric acid.—J. MACKIE WHYTE, M. D., University of St. Andrews.

ACTION OF BEER ON EXCRETORY ORGANS

I think beer kills quicker than any other liquor. * * * The first organ to be attacked is the kidneys; the liver soon sympathizes, and then comes most frequently dropsy or Bright's disease, both certain to end fatally.—S. H. BERGEN, M. D.

BEER-DRINKING A CAUSE OF CONSUMPTION

It would appear that fully 50 per cent of spirit and beer drinkers in northern climates dies of consumption. The relation between consumption and drinking is very close.—T. D. CROTHERS, M. D., Hartford.

SMOKING PREVENTS COMPLETE RESPIRATION

Cigarette smokers inhale the dry, hot smoke into the bronchial tubes, which are thus gradually devitalized and become incapable of performing their proper respiratory functions, and this immediately affects nutrition.—C. H. SHEPARD, M. D., Brooklyn.

CIGARETTES A CAUSE OF KIDNEY DISEASE

The habit of cigarette smoking indulged in by boys under twenty, results in stunted growth, nervousness, indigestion, and disease of brain and kidneys.—C. P. CHESLEY, M. D.

THE TOBACCO HABIT INCOMPATIBLE WITH CLEANLINESS

Touching the matter of person, the tobacco habit is unclean, touching the matter of health, it weakens multitudes, touching the matter of morals; it belongs to the things of darkness.—B. L. WHITMAN, Ex-Pres. Colby University.

METHODS OF TEACHING SCIENTIFIC TEMPERANCE

BY DELOS FALL

State Superintendent of Public Instruction, Michigan.

"Good health and good sense are two of life's greatest blessings."

"Hygiene aims at rendering growth more perfect, decay less rapid, life more vigorous, death more remote."
—EDMUND A. PARKES, M. S., F. R. S.

WITH regard to teaching the effects of alcohol upon the human system it is suggested that this instruction should always be carried on in the same spirit which characterizes the teaching of any other truth of science. It is probably true that when this teaching is mingled with too much sentiment concerning the far-reaching effects of the use of alcohol, the observant child receives it as mere sentiment and discounts it to suit his own personal judgment; but when brought face to face with a truth scientifically presented, showing the actual effect which alcohol has upon the various tissues of the human body, he is convinced of the truth, and will, consciously or unconsciously, formulate a judgment as to the attitude which he personally should assume toward this evil.

Therefore, before proceeding with the subject, certain conditions ought to be insisted upon which, in my judgment, are quite essential to the proper enlistment of the pupil's interest in the subject:

1. The teacher must lay aside all sentiment, both in manner and in words. This subject demands the same cold, critical, scientific treatment that every other question in science receives.

2. On the other hand, the pupil himself must have passed beyond that stage of observation that simply makes sport of the drunken man, making such a man serve as the occasion for fun and frolic. It would be well if the teach-

er should set the pupil to the task of seriously and carefully observing for himself those facts which are apparent when he comes face to face with one of the victims of the alcohol habit.

3. The subject can be studied to advantage only during the progress of regular lessons in anatomy and physiology.

4. Care should be taken not to exaggerate the teaching, for the ordinarily bright boy will recognize the exaggeration and instinctively rebel against it; he will detect the fallacy and discredit not only the exaggeration but the truth as well.

Teach that business considerations as well as those of health strongly favor total abstinence; that the boy who wants a position on a railroad or in a large mercantile establishment is much

more likely to secure it and rise if he abstains from the use of alcohol and tobacco; that many large corporations will not employ young men who use these substances.

Teach that great as the danger is to health and purse, alcohol

is instrumental in causing mental and moral ruin. Let the pupils note for themselves the mental and moral standing of boys who are habitual users of the cigarette; let them see that even here may be observed the pale face, the weakened body, the lack of ambition, the loss of memory, the low motives, and the bad language which are inevitable accompaniments of such habits.

RESOLVE

As the dead year is clasped by a dead December,
So let your dead sins with your dead days lie.
A new life is yours and a new hope! Remember
We build our own ladders to climb to the sky.
Stand out in the sunlight of promise, forgetting
Whatever your past held of sorrow and wrong.
We waste half our strength in a useless regretting;

We sit by old tombs in the darkness too long.

—Selected.



"So near the stars those rugged crests have dared to rise,
Perchance the blossoms on their breasts fell from the skies."

ONE BOY IN TEN TO BECOME A DRUNKARD

BY MARY H. HUNT

THE Christian Advocate of December 18, quotes from the Annual report of Dr. Henry P. Stearns, superintendent of the Retreat for the insane in Hartford, Connecticut, to show that for seventy-nine years more than seventeen per cent of the insanity treated in that institution is attributable to the abuse of alcohol. This is a painful incidental confirmation of the truths our children are learning in the public schools concerning the awful injury alcohol does to the great coordinating forces, the brain and nervous system. In view of this, well does Dr. Stearns say:

"The importance that some effective measure be adopted to have instruction given to the pupils of the public schools of the state regarding the nature and effects of alcohol when used as a beverage can hardly be overestimated. Such a course should be continued even at the expense of less important subjects. This can be done more effectually than anywhere in the higher grades of school."

Let us see how this last suggestion would work. According to the school report of Connecticut, 150 out of every 1000 of those who enter school leave by the end of the third or last primary year, one half of whom are boys. If this study is left for the upper grades, all these go out into the battle of life without school instruction concerning the laws of health, or warning as to the danger in alcoholic drinks and other narcotics, and the same would be true of the 550 out of every 1000, one-half of them boys, who leave before reaching the sixth year.

Before the study of scientific temperance was introduced into the public schools of this country, it was estimated, judging from experience, that one boy in seven in the public schools would be a drunkard. That estimate I made a part of the plea in the national Congress and in many states for the enactment of specific temperance education laws, always adding that I could not vouch for the exact number, it might be more or less than one boy in seven, but that in either case it was our duty to provide the education that would warn all of the danger of beginning the use of substances that are destroying such great numbers who might otherwise be useful citizens. Many middle aged members of legislative assemblies in all parts of our country said at the close of these hearings, "From my recollection of those who started life with me, I do not think the estimate of one boy in seven becoming a drunkard is too large." A professor of economics and sociology in one of our large universities recently told me that

this average has fallen and is now estimated to be about one in ten.

On this estimate, out of 1000 children who enter the primary schools in Connecticut, at the end of the third year will go out 75 boys, unwarned of the danger of beginning to drink, one tenth of whom will be drunkards, and of the 550 out of every 1000 who leave before the beginning of the sixth year, insufficiently warned, 25 boys will be drunkards. This is true every year, provided the instruction is left until grades above the fifth. It is unthinkable that Christian people will abandon so large a percentage of children to such a fate, and as a possible preventive we must not leave any class of pupils unwarned. The physiological reasons for total abstinence need not be dry, on the contrary, with well graded manuals of instruction the average teacher in our country is making the study one of live interest.

BOOK NOTICES

THE SNOW BABY, by Josephine Diebitsch Peary, \$3. Frederick A. Stokes Company, New York.

The story of this little snow baby who first opened her big blue eyes on a world of glaciers and icebergs appeals to children as keenly as do the Arctic explorations of her father to scientists. Ahnighito's home and its surroundings, the dark-skinned Eskimos who came to see this strange white baby and kiss her hand, her visit to Grossma in Washington accompanied by Billy-Bah, and her welcome back to Snow land are all charmingly described by her Mamma, and illustrated by snap shots taken on the ground. One of these pictures, showing Ahnighito in her winter costume of fox and deer skin, is reproduced on another page of this magazine. The large type and attractive binding make the book especially suitable for children and the holiday call for it is likely to be large.

We have on hand a limited number of Journals for the year 1901-1902, including all months except April and May. Files of the remaining eight copies will be sent postpaid to any address for 25 cents a set, or single copies by the hundred at 2 cents a copy.

PHYSIOLOGY TOPICS FOR JANUARY

PRIMARY—Parts of the Body Used in Living: Head, Trunk. Needs of the Body. Food. Table Manners. Heart. Blood.

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Anatomy, Physiology and Hygiene For High Schools. By Henry F. Hewes, M. D., Instructor in Physiological and Clinical Chemistry, Harvard University Medical School. **Price, \$1.00**

With experimental work this book gives a connected outline of the processes which accomplish the maintenance of life in the body and of the rules of hygiene which it is necessary to follow in order to facilitate their harmonious action. Chapters are included upon the nature and action of bacteria in connection with infectious diseases, and also upon physical culture and gymnasium exercises.

Elementary Anatomy, Physiology and Hygiene For Higher Grammar Grades. By Winfield S. Hall, Ph.D., M.D., Professor of Physiology, Northwestern University Medical School. **Price, 75 cents**

Treated according to the inductive method, beginning with the easily observed facts of plant physiology and leading by comparison up to human physiology and hygiene. Simple illustrations and experiments, but no dissections, are presented in connection with the physiological facts. A particular feature of the book is the lessons on domestic economy which form a noteworthy contribution to one of the most important problems of sociology.

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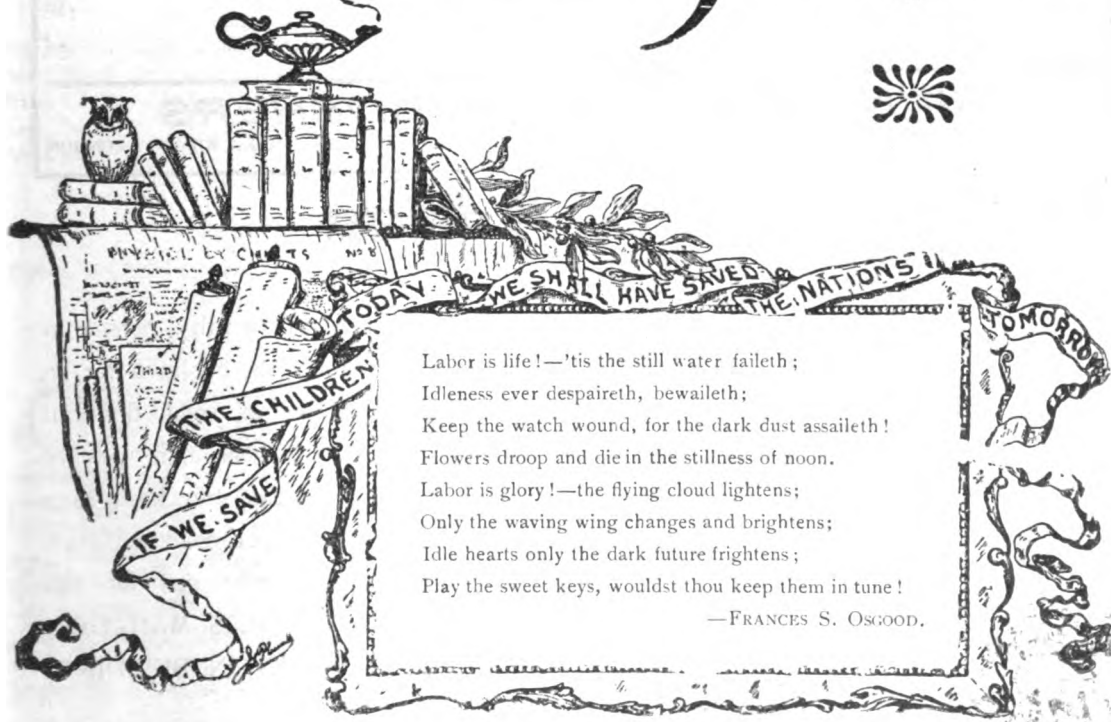
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THE SCHOOL PHYSIOLOGY JOURNAL



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And A Job.

School Physiology Journal

Vol. XII

BOSTON, FEBRUARY, 1903

No. 6

THE FUTURE

The world is young.
'Tis but the morning of the human race.
The night-like ages that have passed away,
Do they seem long? They are the merest span,
A moment in Eternity, an hour
In the full day of human destiny.

The world is young.
The Golden Age lies onward, not behind.
The Pathway through the past has led us up.
The pathway through the Future will lead on
And higher. We are rising from the beast
Unto the Christ and human brotherhood.

The world is young.
And the New Time is filled with glorious days.
We've tarried in the wilderness of wrong
And worshiped there an image made of gold;
But now we leave it for the mountain tops,
To see the promised land of better things.

The world is young.
And God is good; and Truth victorious;
And Right and Love and Virtue stir us yet;
And Christ is living, and we follow Him.
See, brothers, see, the night is on the wane
And all the hills are blossoming with morn.

—J. A. EDGERTON.

TWO FACTORS IN THE MAKING OF AN AMERICAN

BY MARY H. HUNT

“OUR greatest need today, in the words of Superintendent Howard, of New Orleans, is primary education; the education of the masses, the great common people, who are the brawn and sinew of our community. We spend too much money on high schools, colleges, and universities, while the simple education of the great masses is too much neglected. In our public schools the primary grades are overcrowded and the high schools are partly empty. That is an object lesson for our legislators and our rich men.”

The above is true and timely as far as primary education is concerned, and not in Louisiana alone. While this education is probably farthest advanced north of the Potomac, where public schools have been longest established and where the color question does not complicate

the educational problem, in the northern states the immigration question is intensifying as never before the need of the best primary education for the masses.

THE RECOVERABLENESS OF HUMAN NATURE

More than half a million people a year are coming to us from southern Europe. While most of them are white, many bear the stamp of centuries of old-world oppression.

What is to prevent them from producing here the conditions they have fled from, and thus repeating for us the experience of other invaded nations that have been submerged by their invaders?

Our hope lies in the recoverableness of human nature under favorable conditions, and we must provide the conditions. This recoverableness is wonderfully illustrated in the changes that result to humanity when, under kindly conditions, it can blossom upward. “But time,” the objector says, “is a factor full of peril to a republic that is making its invaders a part of its government as soon as the United States does. The historian Green says that the barbarian hosts of Engles who followed Hengest and Horsa into Britain were the first Englishmen, and that it took more than thirteen hundred years to transform their descendants into the Puritans who founded this republic. Our experiment of a government by the people, which depends for its success upon the capacity of the majority to choose and vote for the right, will have a chance to fail many times over if it is to take us as long to Americanize our invaders.”

On the other hand, no other nation ever provided free public schools for the education and enlightenment of its invaders as we are doing. If the children of those grim sea-kings, our English ancestors, had been put into such graded public schools as ours, and had there received, as do our children, such elementary knowledge as is essential to civilization, orally for the first three primary years and with progressive books and other helps in grades above, until they were fourteen years old, who believes it would have taken thirteen hundred years to develop Puritans out of even that stock?

But the objector reminds us that the achieving capacity of our forebears was inherent, only misdirected; that under the transforming power of Christian civilization the adventurous spirit that found expression in piracy has become

modern commercial enterprise, while grim fighting propensities have found expression in defense of such human rights as inhere in a liberty-loving republic.

Again the objector says, "The south of Europe people are of a different stock. We admit it; but when one looks closely into their history he finds them descended from races that have either been at one time great nations or conquerors of the same, both of which facts imply achieving capacity. Greek, Italian and Jewish immigrants can point with pride to the past of their people. The Sicilians, who are now coming in great numbers, are a race made up not only of colonists from the above nations, but of such virile peoples as the Lombards, Goths, Vandals and Normans. They can not therefore be without possibilities capable of development. There has been achieving ability in the past of all these people that must inhere to some degree in their descendants; ability that only needs to be developed and directed according to American ideals to make them a source of strength and power instead of danger to the new land to which they have come. They are here and keep coming, invited by the story of the great wealth and liberty of this country. Already they constitute a majority of the population in some sections.

How their presence is to affect the future of our nation will depend upon our fidelity in securing for them now the education necessary to their development into good citizens.

THE PERILS OF IGNORANCE AND DRINK

While the literacy returns show that, as a whole, foreign-born parents in this country have not failed to send their children to school, it is startling to learn from the last census reports that during the previous ten years Massachusetts dropped from being next to the first of all the states having the greatest proportionate number of children between the ages of ten and fourteen able to read and write, to the ninth in the list, below states once regarded as the frontier.

One writer says, "This fall of Massachusetts in the scale of literacy may be due to several causes." First, "the influx of French-Canadian, Portuguese, Italian, Russian and Syrian children of the ages between ten and fourteen years is large, and will doubtless continue to impress the condition of Massachusetts in this respect." Hence, she needs to bestir herself to educate the children of this mixed multitude. Ignorance and drink are the two perils from which, for her own sake as well as theirs, she needs to save them.

Happily, these two needs are legally provided for by our compulsory free school system upon

which has been engrafted throughout the entire country the study of the physiological reasons for the laws of health, including those that teach total abstinence from alcoholic drinks and other narcotics. But while the study of the laws of health should begin, as the law requires, with the first school year and continue as a progressive study through the grades, the work must be well done in the primary and lower grammar grades of our schools, because these foreign-born children when they enter school are often near or past the age limit of fourteen years, at which time they leave in large numbers to go to work.

A DISASTROUS POLICY

On this point the recommendations of the Massachusetts Committee of Twelve are most disastrous. The Committee recommend oral instruction in temperance physiology in the three primary years, before children have learned to read, which is all very well, but there they draw the line, specifying that pupils in the fourth year, although abundantly able to read and using books in other studies, shall have no books in this subject; and that all study of it as a regular branch shall be entirely dropped in the fifth and seventh years. Thus they recommend that the study of temperance physiology as a "regular branch," that is with text-books in the hands of pupils who have books in other subjects, shall be postponed until the sixth school year. Before that time a large class of these children, including many who most need such help will have left school never again to be reached by its instruction on this subject, which they might have received and profited by if they had studied it as a regular branch, orally in the three primary years, and with text-books in the fourth and fifth years as in other branches.

Oral instruction in primary grades is essential, but it is as illogical to assume that it will be adequate for those who leave at the end of the fifth year, without additional study and helps in the fourth and fifth grades, as it would be to refuse books and progressive study in arithmetic, geography and other branches during those years. Why not shut up the schools and turn the children loose on the streets to let their brain cells rest from all study during the fifth and again during the seventh year?

It is difficult to understand how any one having the well-being of humanity at heart, to say nothing of patriotism and temperance, can approve this proposition thus to deprive our foreign and native population of needed instruction in this subject.

We are painfully reminded in this connection that the number of license cities in Massachusetts has nearly doubled during the last decade.

If the recommendations of this Committee are carried out, there will be no text-book instruction in temperance physiology below the sixth school year to do its part in preventing a continued increase in this number.

The first step toward literacy is learning to read, because ability to read opens the printed page to the learner. That that page should be a guide to the knowledge that will help the child to lead a happy and useful life and to be a good citizen nobody questions, except a few who have never told why it should be refused the pupil in physiology and hygiene which includes the physiological reasons for total abstinence from alcoholic drinks and other narcotics, a study teachers know the least about.

WISE AND HOPEFUL METHODS

The influx of immigration has evidently affected the ranking in literacy of other states, especially the manufacturing states to which immigrants naturally flock for employment.

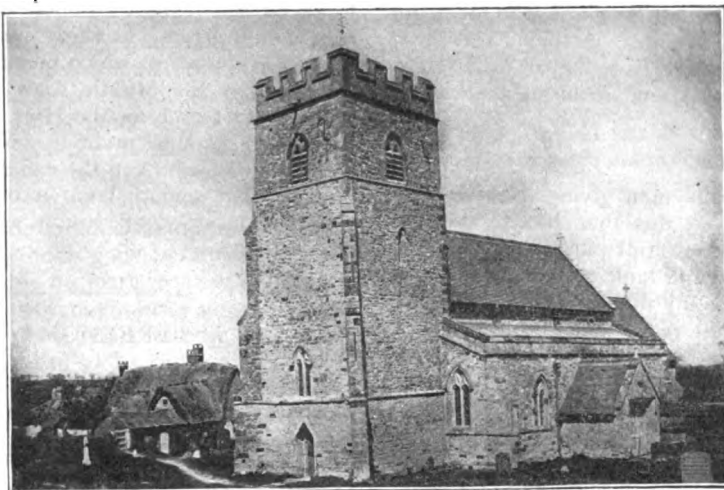
New York during the last ten years has dropped from the eighth to the fourteenth rank in the scale of literacy; Illinois from the sixth to the fifteenth; and Pennsylvania from the sixteenth to the twentieth. But nevertheless, there is great hope that these, our most populous states, will not consequently suffer more severely from the drink curse, because each has a strong temperance education law in successful operation, and the Christian and temperance people of all three of these states, New York, Illinois, Pennsylvania, are vigorously opposing any attempts to weaken these laws or their enforcement in any way, while they are especially watchful to secure the best results in the lower grades.

Connecticut has dropped in the scale of literacy from the fifth to the seventh place, and that state has, alas, small reason to hope that the temperance question will not correspondingly suffer within its borders, for it has weakened its temperance education law, taking all legal re-

quirement of the study from the primary grades, which excludes 15 per cent of the entire number entering school, and making no legal provision for systematic text-book instruction in the subject until the sixth grade, too late to reach the largest number.

AN UNAMERICAN IDEA

A man connected with the administration of public instruction in one of the thirteen original states recently said, "Temperance physiology, thoroughly studied in the lower grades of school will educate the masses. The same study confined to the higher grades will educate the coming leaders of thought, the influential people of the future. Which will be the more beneficial? I am inclined to think the latter method will be the better."



Old stone church still standing in Sulgrave, England, the ancestral home of the Washington family.

"Why not provide for the thorough progressive study of this branch by all pupils in all grades?" I asked. "That is what the law requires. Thus not only a select few, but the masses, the sovereign people, will be their own intelligent leaders on this question."

The plan of omission in lower grades is better adapted to an aristocracy than a government of the people. I agree with Dr. McMurtry, that "The proper bringing up of a commonplace American child requires us to sift out the gold nuggets from a whole series of civilizations."

TWENTY YEARS OF WAITING FOR THE SCHOOLMASTER

The National Educational Association had been in session in Minneapolis five days. Men and women engaged in education from all parts of this country, after discussing every phase of almost every topic taught in any grade of school, closed their meetings with a long list of resolutions from which it seemed to me only one subject was omitted. Turning to a gentleman on the platform, a superintendent in one of our great western cities, I asked, "Is it not almost time, in a gathering like this, for the teachers of this country to make some declaration of

their loyalty to the great commission delegated to the profession by this nation, when it made the study of temperance physiology a mandatory branch for all pupils in all public schools?"

"The truth is," he replied, "there is some reaction against the study being thrust upon the schools by legal requirement, without giving us time to adjust it to our school systems and to adjust ourselves to it." How long a time do these gentlemen want to adjust this study to the school system and themselves to it? Is not twenty years enough? Two decades have passed since the first temperance education law was enacted in this country, to be rapidly followed by similar legislation in state after state until it is now a national requirement. The laws first enacted merely required the study by all pupils in all schools, presupposing that school men would adapt or grade it to meet this progressive need of pupils as they have other branches. Since they have failed to do this, recent legislation is now requiring them to do it.

THE NEED OF CONSTRUCTIVE ABILITY

"Why are school men giving so little constructive ability to this branch?" I recently asked another school principal. "Some of them do not hesitate to find fault." He replied, "It takes very little ability to find fault. Any one can do that, but the real trouble with most of us is we do not know much about the subject, and so we are shy about touching it."

This I honestly believe is the trouble. Dr. W. T. Harris, United States Commissioner of Education admits as much in his report quoted in part on another page of the JOURNAL.

Where this subject is reduced, as Dr. Harris says, to "progressive lessons" in "pedagogic form," "the first lessons are good and valuable if no more lessons are given." They cover what the children can then comprehend and need to know. "These early lessons prepare the pupil step by step for the later lessons," and the necessary steps are not lacking which connect the truths already learned with the larger development of the subject which follows. It is a tax on patience which has given years of study, not only to the whole subject but to its progressive pedagogical adaptation to all grades of pupils, to be told with dogmatic assurance that nothing should be taught until the ninth school year concerning that great co-ordinating force which controls the whole human structure, the nervous system.

But better days are coming. Good courses of study in this subject providing for progressive lessons are already published, with more to come. The questions and criticisms afloat imply thought that will result in study of the

whole subject, and this in the reception and advocacy of the very principles now questioned. This subject is one of more than mere pedagogics; it involves the question whether the generations, home-born and foreign-born of this great republic, coming from our schools shall be strong in mind and body and clear of brain, equal to the tasks that are awaiting them in life. They will be, if under your tutelage, teachers, they learn how to care physiologically for their bodies, and to keep undefiled by alcohol and other narcotics this noblest of all God's structures, in which their souls must dwell until time for them shall be exchanged for eternity.

A nation, rich not only in material resources but in strong, pure men, true, beautiful women and lovely children, can not fail to result from this special education, perfected as it is destined to be by the highest co-operation of the men and women in our teaching profession. May none hear the words which Guerber says in his "Legends of the Middle Ages" that Parzival heard in his search for the Holy Grail, after he had failed through pride to ask the question that would have broken the evil spell liberating an enthralled soul, "THOU HAST BEEN CHOSEN TO DO A GREAT WORK WHICH THOU HAST LEFT UNDONE."

FREEDOM

The wild birds sang on bough and wall
That day the Bell of Independence Hall
Thundered upon the world the Word of Man,
The word God uttered when the world began—
That day when Liberty began to be,
And mighty hopes were out on land and sea.

But Freedom calls her conscripts now as then:
It is an endless battle to be free.
As the old dangers lessen from the skies
New dangers rise:
Down the long centuries eternally,
Again, again, will rise Thermopylae—
Again, again, a new Leonidas
Must hold for God the imperilled Pass.
As the long ages run
New Lexington will rise on Lexington:
And many a valorous Warren fall
Upon the imperilled wall.

Man is the conscript of an endless quest,
A long divine adventure without rest—
A holy war, a battle yet unwon
When he shall climb beyond the burnt-out sun.
Each hard-earned freedom withers to a bond:
Freedom forever is beyond—beyond!

—EDWIN MARKHAM, in the *Independent*.



Primary Lessons

SECOND YEAR

KINDNESS

"There is none in life
But needs it and may learn."

HORTICULTURISTS find that the choicest varieties of fruit and flowers refuse to remain choice without constant care. The rare chrysanthemum of the greenhouse bears slight resemblance to the meadow daisy, but traces of its lowly origin must somewhere persist, for the moment cultivation stops it begins to retrograde towards the original type.

The same law holds good in human development. Watch the ordinary group of children at play. Petty acts of unkindness appear almost as quickly as supervision is withdrawn, not because children mean to be cruel, but because they have not yet learned to feel as their own the pain they cause another.

As soon as the child is old enough to play with other children, he is old enough to learn that they have rights which must be respected as well as his own. More than this, he is dependent on other people for almost everything he has, for the food he eats and the clothes he wears, for books and toys and games, even for the power of speech.

So much dependence on others calls for thoughtfulness toward them on his part, if he would not be ungrateful. This is one of the first principles of kindergarten games, and it should be kept well to the front during the whole school course.

In addition to the incidental instruction to be given whenever the need for it arises, set apart some time for definite lessons on kindness. Teach the children what kindness is, to whom it is to be shown, and why we should be kind to every living thing. Point out also definite ways of showing kindness.

(1)

A DEBT WE OWE

A tendency to be guarded against is the dis-

position of children to regard acts of kindness on their part as a virtue rather than a duty. A story is a good way to set them right on this point.

NOBLESSE OBLIGE

"See what grandpa gave me for being a good boy!" said little Richard, holding up a shining ten cent piece.

"I was out on Long Hill with my new sled," he went on eagerly, "and, oh mother, it's the best coasting you ever saw. Just as smooth as glass.

"All the boys had sleds but Jack Noble, and I s'pose his father is too poor to buy him one. Any way, he was just standing around watching the rest of us, so I told him he could take my sled half the time.

"Grandpa came along when it was Jack's turn, and asked where my sled was. And when I told him, he said, 'That's the stuff,' and gave me this ten cents. What'll I spend it for?"

"Mother is glad her boy was kind, but he was only paying his debts."

"Why, what do you mean, mother? I don't owe Jack anything."

"Do you remember asking me once about the two words on my locket, *noblesse oblige*? They are French, and mean that those who have had much given to them owe much to other people in return.

"I had a good home and kind parents when I was a child, and I owe the same care to you.

"You have a sled and many other toys, so you must share them with Jack and others who have none.

"Any one who has a good education should help somebody else to learn whenever he has a chance. That is what your teachers are doing for you.

"Some people have a great deal of money. *Noblesse oblige* means that they must use it in such a way that others will get the benefit of it as well as themselves."

"Does it mean my ten cents, do you think?"

"Yes. It does not mean that you have to give it away necessarily, but you owe it to others to do good with it.

"A shorter way of saying *noblesse oblige* is just this, be kind. And in that way you see it means everybody; because there is no one so poor or ignorant that he can not be kind to others in some way.

"But the more one has, the more we expect of him, and there is more chance for him to share with others, or do good with what he has; just as a King, because he *is* King, is servant of all, and owes more to the least of his subjects than they can possibly owe to him."

"I know how I am going to spend my ten cents," said Richard after a pause. "Can you guess?"

Can you?

Get the children to tell what they would do with ten cents under such conditions, and write the best answers on the board. Discourage suggestions that are plainly made for effect, and emphasize again the fact that being kind is only living up to one's privileges, and that nobody deserves praise for that.

(2)

WAYS OF PAYING THIS DEBT

What are some of the ways in which we can be kind? We can be on the lookout to see what people need, and what we can do for them. Tell some of these needs that you have noticed today in school; at home; on the playground; in the street.

Have the children tell some of the acts of kindness that are showed to them every day. Somebody has built the houses they live in, furnished them, and made them comfortable homes. Somebody cooks their food and prepares their meals; makes their clothes and keeps them mended; makes books for them to read and pictures for them to look at. What can they do in return for so much kindness?

Pet animals are almost always kind to those who treat them well. A horse will go out of his way to avoid stepping on a child, and dogs and cats will suffer much at the hands of children without making any ill return. Even wild animals have been known to be good to children. Tell the story of Romulus and Remus and the wolf in this connection.

What do we owe to our pets? How can we be kind to kitty? to the dog? to other animals?

Read to the children parts of Longfellow's poem, *The Birds of Killingworth*. Tell how much good the birds do everywhere in eating insects which would spoil the fruit and vegetables. What can we do for them in return? Let the children keep a record of all birds seen near the school during the different months. Why should we be especially kind to the birds in winter?

(3)

EFFECTS OF KINDNESS ON OTHERS

Everybody wants to have friends, and nothing does so much to make people friendly as to show them some act of kindness when one has the opportunity. Give this thought to the children through the story of

LYNN'S CROSS NEIGHBOR

Some new people had just moved into the house next to the little cottage where Lynn and Sara lived, and they were all eagerness to know who their neighbors were.

"I do hope there are some children for us to play with," they said, over and over again, and they felt almost like crying when they found that the newcomers were only an old man and his wife.

"He looks cross enough to bite a nail in two," Lynn told his mother a day or two afterward. "We always run if we see him coming out of the house. He scares us so."

"Well, be kind to him whenever you have a chance," said mother. "Perhaps you will find him better than you think."

That very night there was a hard snowstorm. It was Lynn's work to clear all the paths before he went to school, and how he did hate to get up so early.

He had just waked up enough to dread it the next morning, when he heard the sound of a snow-shovel outside. He tiptoed over to the window and looked out. Yes, it really was their next door neighbor.

By the time he was dressed there was a fine path all around the house and he did not have to go out in the cold at all.

"Now you must think what you can do for him," said mother, with a little twinkle in her eye. "It will never do to let such a cross person get ahead of you in doing a kind act."

"You are laughing at me," said Lynn, "but I guess I deserve it. I don't believe he is cross after all, and I'm going right over to thank him and see if he doesn't want me to bring his mail when I come home from school."

He was back in a few minutes. "Oh, mother, he says he wishes I would get his mail, because it is so far for him to walk, and he sent you these apples."

All winter long Lynn and his neighbor changed work in this way, and both found that it paid to be kind.

Animals are influenced by kindness as much as children. Tell the children about the wonderful trained horse, Jim Key. Using cards with letters or figures on them, he can add, subtract, or multiply small numbers as quickly as anybody, spell his own name, and perform many other tricks that are equally surprising. His master has used only kindness in training him. If he had been harsh or cross he could not have succeeded.

A DOG THAT COULD SAY HIS PRAYERS

Bundar looked like any other pug dog, but

he knew a great deal more than most of them do.

"It is time to go to bed now," his mistress would say. "Come, say your prayers."

Bundar would jump up in a chair, put his fore paws on the back, bow his head on his paws, shut his eyes, and stay there until she said, "Amen!" Then he would jump down at once.

He could play hide and seek. All you had to do was to show him a handkerchief, then tell him to go out of the room. After it was well hidden, he would begin to hunt for it.

He knew what "warm" and "cold" mean as well as you do, and he never spent any time looking in "cold" corners.

How excited he would get when he was told that he was "hot!" and after that it never took him more than a minute to find the handkerchief.

Sometimes his mistress would offer him a bit of cake, saying "Kruger sent it to you." Bundar was an English dog, so he would only shake his head.

If she put the cake on his nose he would scowl but not offer to eat it. If she tried to put it into his mouth he would spit it out.

Then she would put another piece on his nose and say, "Lord Roberts sent this." Almost before she was through speaking it would disappear down his throat, and Bundar would be bowing his thanks.

If his mistress asked him what he would do for his King and country, Bundar would throw himself down limply and "die" at her feet.

"How did you ever train him to do such clever tricks?" I asked.

"Just by telling him over and over what I wanted him to do, and always treating him kindly," was her answer, and it told the whole story. We can do a great deal with our pets in this way, but nothing at all by being unkind to them.

(4)

POINTS TO REMEMBER

In review, ask each child to tell something

he has learned about kindness that he did not know before. Write all the different answers on the board and leave them in sight of the class for several days, pointing to each, or underscoring it as occasion may require.

Kindness is treating other people as we would like to have them treat us.

We owe kindness to everybody.

We should be kind to our parents, because they have done much for us.

We should be kind to our playmates, because we may sometime need help from them.

We should be kind to strangers, because we may some time be in a strange place.

We should be kind to old people, and to those who are smaller than we are, because they need our help.

We should be kind to birds and animals, because they can not tell their needs.

The more we have, the more we can do for others.



"I know how I am going to spend my ten cents"

FOR KEEPS—Mamma —"Don't be so selfish. Let your baby brother play with your marbles a little while."

Tommy — "But he means to keep them always."

Mamma — "Oh, I guess not."

Tommy — "Yes he does, 'cause he's swallowed 'em."—*Philadelphia Press*.

GOOD FOR EVIL

An organ-grinder stopped to play in front of a tenement-house. A number of children gathered to hear him. A large, rude boy made a snowball and threw it, knocking off the organ-grinder's hat and it rolled into the gutter. The man picked up his hat, brushed it, and put it on. Then he said to the big boys, "Now, I will play you a merry tune," and he bowed and began to play a lively air. The little children danced, but the large boys were ashamed and walked away. The organ-grinder had taught them a lesson. He had returned good for evil.—*Ex.*



PUNCTUALITY

SOME years ago a New York merchant wanted a bootblack to meet him at a certain corner every morning on his way to business. He tried several before he found one who was exactly on time every day for a week. That boy is now in the merchant's permanent employ, and in the line of swift advancement if he keeps on as he has begun.

The boy or girl who knows the value of time is always in demand, while there is no place anywhere for the laggard. Punctuality is a habit, and as such it must be formed in early life if at all. This responsibility devolves upon the school in great measure, since the child is under its care during so large a portion of his waking hours. It can meet this responsibility in two ways; by example and precept.

In the first place, every session of the school and each recitation should open and close exactly on the stroke of a reliable clock. Occasionally some valuable bit of information may be lost to the class because "time is up," but the pupils will gain far more in appreciation of the importance of punctuality. When this is the unvarying rule of the school, the same promptness can reasonably be required of them and should be.

In addition, every boy and girl must be taught why it is necessary to form the habit of being on time, and how this will affect their success in life. The first topic to be considered in this connection may be punctuality as

A BUSINESS REQUIREMENT

In most schools, the great majority of pupils will have their own living to make in after years. Punctuality will be required of all such the moment they begin a business life, whether they have ever been on time before or not. Call attention to this fact while they are still in school, and discuss in class this coming responsibility.

Write on the board names of factories or

other places of business in the vicinity and have the class find and report as to the hours of work in each. At what time do they open and close? How much does this time vary from day to day? How long an intermission is given at the middle of the day? Another point to find out is what provision is made for the tardiness of employees. Are they required to make up lost time, or is its value deducted from their wages?

Pupils in country schools may find instead what time the farmers begin their work in the morning, and how much this varies in any case during a week or month. Why is this punctuality necessary on a farm? Compare the general appearance of farms on which work begins promptly every day with that of others where little or no method is followed in this respect. Account for the difference found.

Find what requirements in punctuality must be observed by railroad men. How is the lack of punctuality guarded against in work that involves the care of human life? What might be the result if a switchman were late in getting to his work, or if he should go home before being relieved by some one else?

Take up other kinds of business in the same way, finding the hours of work for clerks, office boys, expressmen, milkmen and others, and the degree of punctuality which must be observed by each, with reasons.

In cities and large towns boys begin selling papers while they are still in school. What does lack of promptness mean in their case? Girls leave the grammar school to become clerks or typewriter operators. How long will they keep their positions if they are habitually tardy?

Ask each one in the class to choose the kind of business he thinks he would prefer to engage in, and then find what hours he would be expected to keep in it. What will be the penalty of failure?

Bring out some of the reasons why punctuality is necessary in all kinds of business; for instance, the loss in time and money involved, the inconvenience to customers and the consequent falling off in trade, as well as the inability to compete with other firms who are punctual. Place these facts before the class in actual figures. For instance, if a firm employs five hundred workmen and each is five minutes late in beginning work, how much time would the firm lose in a day? in a month? a year? How much money would be lost, if the average daily wages are \$1.50?

AN INDICATION OF CHARACTER

Call attention to the fact that practically every successful business man is habitually prompt and punctual and has been all his life.

If he makes an engagement he is on time to the minute. Everything he undertakes is done quickly, and just as well as it can be done. How is it with people who earn barely enough to live on? It would seem as if they of all people could least afford to be lazy or behind-hand, but they frequently are just the ones who are. These facts show that there is a close relation between one's own habits which form his character and his success in business. What is this relation?

In almost every kind of employment there are young people who begin on the same salary, but in a year or two some are getting much more than others. It is not favoritism but merit that makes the difference. Those who have been promoted are invariably the ones who are always prompt, energetic, and busy at their work. These habits show what their character is.

Lack of promptness predisposes to other bad habits. Why is it that the idle boy or the lazy one is frequently a cigarette smoker, and then a beer guzzler by the time he has become a man? Call attention also to the fact that these habits react on each other; that smoking and drinking tend to make a person

indolent and slow in doing his work. Have the class find the reason for this, by noting what their physiologies state as to the effect of such narcotics upon the nervous system.

Refer to those boys and girls who have recently left your school and are succeeding best in a business life. What do you know of their habits? How are these habits helping to make their work a success?

STEPS IN ITS CULTIVATION

Nowhere is punctuality more strongly insisted upon than in the army and navy. From the moment a youth enters the service, all his time must be accounted for and every duty must be performed exactly at the proper time. The story of the old soldier who dropped his dinner pail in the mud when a fun-loving friend called

out, "Present arms!" shows how strong the habits of punctuality and obedience may become. The question is how to form such habits in the first place.

Describe to the class the daily life of a West Point cadet. He must rise at six o'clock every morning but Sunday, and then at seven, do his room work, and then go to breakfast. After breakfast comes forty minutes for rest and recreation, followed by recitations and study until one o'clock. One hour is given to dinner and rest, then come two more hours of hard brain work, an hour and a half of drill, the dress parade, at which he must present himself in spotless order, supper, and three hours more of study. At ten o'clock "taps" is sounded, and every light goes out for the night.

Illness is the only excuse for failure to appear at any exercise, and all work must be made up

afterward. If a cadet fails, he is dropped to a lower class or dismissed from the school.

Put this daily program on the board and ask all the class to contrast it with one of their days. Have each one copy it, making out also a list of the things he is expected to do every day, and the time at which each should be done.



"Dream! yes, dream! but be more than a dreamer!
Work while you dream, that your dreaming be yes, not idle or vain."

How do the two lists compare? Which has the easier time and the more leisure? Which is getting the better training for his future life?

Get the whole class if possible to try the West Point plan of punctuality throughout their entire day, substituting their own tasks for those of the cadets. At least, see that it is followed during the school hours. Reserve one of the blackboards for the day's program, that the class may have constantly before them the exact times when they are to recite and study, and also the hours for recess. Only some great emergency should then prevent the carrying out of the schedule exactly as written.

Children who have lived in the country or have been on tramps through the woods know that cows and other animals make deep paths for themselves by walking in the same places

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And A Job.

School Physiology Journal

Vol. XII

BOSTON, FEBRUARY, 1903

No. 6

THE FUTURE

The world is young.
'Tis but the morning of the human race.
The night-like ages that have passed away,
Do they seem long? They are the merest span,
A moment in Eternity, an hour
In the full day of human destiny.

The world is young.
The Golden Age lies onward, not behind.
The Pathway through the past has led us up.
The pathway through the Future will lead on
And higher. We are rising from the beast
Unto the Christ and human brotherhood.

The world is young.
And the New Time is filled with glorious days.
We've tarried in the wilderness of wrong
And worshiped there an image made of gold;
But now we leave it for the mountain tops,
To see the promised land of better things.

The world is young.
And God is good; and Truth victorious;
And Right and Love and Virtue stir us yet;
And Christ is living, and we follow Him.
See, brothers, see, the night is on the wane
And all the hills are blossoming with morn.

—J. A. EDGERTON.

TWO FACTORS IN THE MAKING OF AN AMERICAN

BY MARY H. HUNT

“OUR greatest need today, in the words of Superintendent Howard, of New Orleans, is primary education; the education of the masses, the great common people, who are the brawn and sinew of our community. We spend too much money on high schools, colleges, and universities, while the simple education of the great masses is too much neglected. In our public schools the primary grades are overcrowded and the high schools are partly empty. That is an object lesson for our legislators and our rich men.”

The above is true and timely as far as primary education is concerned, and not in Louisiana alone. While this education is probably farthest advanced north of the Potomac, where public schools have been longest established and where the color question does not complicate

the educational problem, in the northern states the immigration question is intensifying as never before the need of the best primary education for the masses.

THE RECOVERABLENESS OF HUMAN NATURE

More than half a million people a year are coming to us from southern Europe. While most of them are white, many bear the stamp of centuries of old-world oppression.

What is to prevent them from producing here the conditions they have fled from, and thus repeating for us the experience of other invaded nations that have been submerged by their invaders?

Our hope lies in the recoverableness of human nature under favorable conditions, and we must provide the conditions. This recoverableness is wonderfully illustrated in the changes that result to humanity when, under kindly conditions, it can blossom upward. “But time,” the objector says, “is a factor full of peril to a republic that is making its invaders a part of its government as soon as the United States does. The historian Green says that the barbarian hosts of Engles who followed Hengest and Horsa into Britain were the first Englishmen, and that it took more than thirteen hundred years to transform their descendants into the Puritans who founded this republic. Our experiment of a government by the people, which depends for its success upon the capacity of the majority to choose and vote for the right, will have a chance to fail many times over if it is to take us as long to Americanize our invaders.”

On the other hand, no other nation ever provided free public schools for the education and enlightenment of its invaders as we are doing. If the children of those grim sea-kings, our English ancestors, had been put into such graded public schools as ours, and had there received, as do our children, such elementary knowledge as is essential to civilization, orally for the first three primary years and with progressive books and other helps in grades above, until they were fourteen years old, who believes it would have taken thirteen hundred years to develop Puritans out of even that stock?

But the objector reminds us that the achieving capacity of our forebears was inherent, only misdirected; that under the transforming power of Christian civilization the adventurous spirit that found expression in piracy has become

day after day. It is easier to do this than to try to make a new path every time. Tell the class that brain paths are made in something the same way. That is, every time any one does a certain thing a corresponding impression is made in his brain. The next time he does the same thing the impression becomes a little deeper, and when he has done one thing a great many times the impression has become so strong that he can do it almost without thinking. It has become a habit.

This shows why it is easier for some people to be on time than others. They have practised punctuality so long that it takes little or no effort to be prompt. On the other hand, when one puts off work day after day, or neglects it, he is fast forming habits of idleness which perhaps never will be overcome.

In every kind of business there are always two kinds of workmen; those who by their promptness and energy have grasped every detail of their work, and others who look upon every duty shirked and not found out as so much clear gain. To which class do you belong?

A CAUSE OF FAILURE

Probably nine out of ten men past middle life, if asked how it happens that they are today only barely earning their living, would tell you that they never had a chance; that they were kept back, that circumstances were against them, that they had no opportunities, such as other boys around them had, that they did not have the proper schooling, or else plead some similar excuse.

The probabilities are that opportunity did visit every one of these men more than once in their youth or early manhood; but that they did not see that all good chances consisted in doing everything they undertook cheerfully, promptly, and just as well as it could be done.

They did not think that their slipshod methods, their careless attire, and their aggressive manners, would lie as great bars across the path of their future success, and keep them back from the goal of their ambitions.

They do not think that all these things were the real causes of their being fixtures at salaries of ten or fifteen dollars a week.

They did not think that these seeming trifles in youth would doom them to be perpetual janitors, clerks, or farm hands, and that it would be almost impossible in maturity to outgrow the defects of their youth.—ORISON SWETT MARDEN.

ELEMENTS IN SUCCESS

Brightness, cheerfulness, alertness, promptness and energy of attitude and bearing are things which attract attention very quickly and secure situations where dullness and carelessness of attire, though joined as they sometimes are, with unusual intelligence and wisdom, make undesirable employes.—*Success*.

PROMPTNESS THE FIRST LESSON

Promptness is the first lesson every boy and girl should learn. The person who is not punctual—who is not on time—is not honest. If you desire the services of a boy or girl in your office or store to run errands, consult the teacher's tardy roll and pass by all whose names are found there.—*Country School Champion*.

ACHIEVEMENT THE STANDARD IN LIFE

One of the surprises of life for the youth beginning business is to learn that mere virtue is not a sufficient equipment for success; that if he means well, that is not all that is required of him. He comes into an office with an amiable intention to do the right thing, and it is both touching and amusing to see his bewilderment when his placid, "I couldn't find it, sir," is met with an impatient, "But you must find it! Never come back with that sort of an answer." It opens up a new world to him, a world where achievement is the criterion, responsibility the common lot, and the ability to accomplish something the test of manhood. If he learns the lesson, he will be graduated into the class of master-workmen, for it is the workers, the men who can achieve, that have the mastery of the world. If he does not, he will remain to the end of the chapter an amiable nonentity.—*Fame*.

WHICH GENERAL

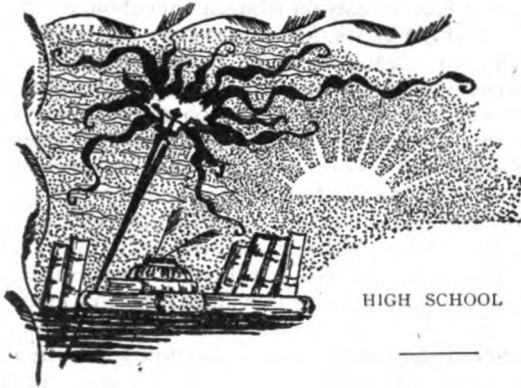
Sometimes mamma calls me "general,"

I wish I knew which one;
But I always try to tell the truth,
So I hope it's Washington.

But when I tell my papa that,
He laughs loud as he can,
And says if she calls me "general,"
She must mean Sheridan;

Because whenever she wants me,
And I am out at play,
I nearly always seem to be
'Bout "twenty miles away."

—KATE W. HAMILTON.



SELF-RELIANCE

IN the wonderful story of the Round Table, the supreme moment comes when the best knight in the world arrives to fill the honored place at the King's right hand. Every eye is turned anxiously on the new comer, for no one else has ever sat in the "Siege Perilous" and lived; but there is no fear or dread in the eyes of Galahad. Confidently, modestly, he takes this seat before them all and completes the list of brave men who have vowed in all things to be true and loyal to God and the King.

A "siege perilous" stands empty today in each of the countless forms of the world's activities, waiting for that best man or woman who alone can fill it worthily. Its acceptance is fraught with disaster only for the unprincipled, the incompetent and the weakling; the Galahads find their names written in it in letters of gold, and for them it is an opportunity for larger service.

Many of those who are to fill these seats in the future are now in our high schools, and to the whole army of young people the lists are open. Two conditions must be met; fitness to assume the responsibilities involved, and belief in one's self and one's own ability to fulfil them.

To this end, training in self-reliance should begin with the child's earliest years and continue through the whole school course. From the first he must be taught to stand on his own feet and to stand alone; to depend on his own head and hands to conquer difficulties; and above all, to control his own acts and to use wisely that utmost liberty which is his as long as he does not abuse it.

By the time he has reached the high school, the youth is prepared to understand the business value of self-reliance and consequently

ITS PRACTICAL WORTH IN LIFE

One of the best methods is to study the lives

of men and women whom the world honors, noting the times when each was thrown on his own resources and the way in which he proved equal to the strain. Washington, surveying in the woods of Virginia while yet in his teens; Franklin, alone in the streets of Philadelphia; Stewart, creating the largest dry-goods business in the world; Lincoln, emancipating a race, are illustrations which may be multiplied indefinitely.

Select any kind of business or profession which especially appeals to the class and study with them the leaders which have developed it and given it higher rank. Notice the fact that these are always capable and self-reliant, not a weakling among the number. Why not?

A short time ago a man without arms or legs was chosen by the government to go to the Philippines to make some confidential observations. He was brilliantly successful. Here was self-reliance, hand in hand with ability, overcoming the severest physical handicap and making life and work a success.

What did self-reliance mean to the handful of American colonists in the dark days of '76? to Field, laying the Atlantic cable, and Fulton struggling with the first steam-boat? What has it done for every man and woman who has won name and fame?

STEPS IN ITS ACQUIREMENT

Read to the class Hubbard's "Message to Garcia," the story of a young man in the Cuban war who was told to find General Garcia and give him a certain message. He went and did it, not asking why or how or when, or if somebody else could not do it just as well. That is the whole secret of self-reliance everywhere.

Carrying the same principle into school life, the self-reliant youth is the one who gets his lessons without help, who studies as diligently by himself as when he is being watched, who is fair and square on the playground, who is not afraid to refuse to smoke cigarettes or take a glass of beer.

Every day of one's school life, as well as later, questions will arise which some one must settle. Whoever does so honestly, and to the best of his ability, has acquired a little more self-reliance than he had the day before. Whoever shirks this responsibility has grown a little weaker. "Captains of industry are invariably the men who have made the most of their opportunities, and who are well equipped and ready when the call comes for good men at the front. There will be great crises in the future as in the past, and every young person should regard himself as the possible leader who may be summoned in such an emergency."

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SOME UNTENABLE CRITICISMS ON THE TEMPERANCE EDUCATION LAWS

BY MACY A. SMITH

AN article written by Superintendent W. B. Ferguson, under the title "Temperance Teaching and Recent Legislation in Connecticut," appeared in a recent number of the *Educational Review*.

The author concedes to his readers some well established facts, viz., that "The use of intoxicants has been the cause of poverty, crime, and suffering, of social and personal degeneracy, of political corruption and social disaster." For all this he suggests no remedy. He also says that it has produced problems which have baffled philanthropists and statesmen. This certainly no sane person would question. Next, he proceeds to call the roll of temperance organizations from the days of the Nazarites and Rechabites down to the present hour. The Woman's Christian Temperance Union is the last on the list. All except the last, to his thinking, have proved failures, for "In spite of statute and moral suasion, in spite of the strong arm of the law and the appeal of reformers, nearly all the evils and problems that have their source in alcoholic drinks remain to cause public anxiety and sometimes alarm." "Laws punishing drunkenness and designed to regulate the traffic are old," and like all else, have failed.

As one of the leading agencies in modern temperance work, affecting both public instruction and legislation, he singles out the Woman's Christian Temperance Union. If we understand the author correctly, this organization is doing more harm than good. It is doomed ere long to take its place with the dead and useless organizations of the past. It is responsible for "laws which do violence to modern pedagogy, which force upon the schools devitalized and machine like methods, and a kind of teaching

which is a travesty on modern education, all in spite of the opposition of teachers and school superintendents, in spite of state officers of education, college professors, and college presidents, in spite of prominent physicians, clergymen, the public press, and even legislators themselves." One might inquire in passing how it is possible to "force upon the schools" any law "in spite of the lawmakers themselves," without whom no law can be enacted.

That the Woman's Christian Temperance Union possesses force is evident from the influence it has exerted on legislation and elsewhere. It is therefore a power to be reckoned with.

Even according to the author, "the object of this society is noble." "Only praise can be bestowed upon its ultimate object." What, then, are the grounds for such opposition as he arrays against this noble order?

First, the organization is fully resolved that all the children of the schools shall be taught what science has to say on the effects of alcohol. They believe that on this question as on all others, learning is better than ignorance. The assertion of the author, that the temperance education movement rests upon the old Socratic philosophy that knowledge of evil insures the avoidance of evil, is an absurd assumption. Nobody has ever made so sweeping a claim; but knowledge certainly tends to influence action, and in time is sure to become cumulative. When this cumulative knowledge of the effects of alcohol has influenced the majority of the people, the saloon will be abolished. Therefore, it is our duty to educate in matters pertaining to temperance, as well as in other subjects, even though in every individual case knowledge may not be acted upon.

Most people know that accumulation of refuse about the dwelling house may be productive of disease and death, yet some fail to remove it. Are our boards of health then acting on "an assumption not founded on truth" in continuing to educate the public as to the dangerous consequences following such a course?

Moreover, the author of the article under review is inconsistent with himself, for on another page he says, "The evil effects of alcohol and tobacco should be pointed out to children."

A second objection to the present system of temperance education seems to be that it does violence to pedagogy. Ideals alone, we infer, are fit subjects for the minds of children. How unfortunate that the Bible is so unpedagogical as to teach the Decalogue as well as the Beatitudes! It may be well to take a lesson from the Great Teacher. Who does not know that the parable of the Prodigal Son is considered

the Gospel in a nutshell? Was it an ideal boy, or an ideal young man, or an ideal mature man, that was thus held up to view? Yet that parable is an illustration of the work of the greatest teacher the world has yet seen, some modern ideas of pedagogy notwithstanding.

But although granting that some temperance instruction should be given, Mr. Ferguson complains, in the third place, that many of the existing laws are too stringent, and that school officials were not consulted nor their advice followed. Without recrimination, it may be said that in every case in which weak laws have been strengthened there had been previously a period of years during which such laws gave educators abundant opportunity to develop an effective system of temperance education according to their own ideas. Those ideas, for the most part, seemed to be to do as little as possible, and they were thoroughly lived up to, to the detriment of the children.

For this reason, the people of our most populous states were compelled to take the matter into their own hands and indicate in more specific laws a minimum of the work to be done. As to immediate results, the Report of the New York State Central Committee, lately issued,* contains abundant testimony from every county save one that the universal instruction required by the revised law is powerfully influencing for good the habits of the children.

The law of Pennsylvania is cited in the article under discussion as an illustration of effective results secured under a "liberal law." But the author misrepresents its provisions. He says that it "specifies nothing as to what, how much, or how temperance should be taught, nor is it specified that text-books should be used in any grade."

That law says that this subject shall be studied and taught "as a regular branch by all pupils in all departments of the public schools of the commonwealth;" that there shall be "proper provision for instruction in physiology and hygiene which, in each division of the subject, gives special reference to the effects of alcoholic

drinks, stimulants and narcotics upon the human system," . . . and any failure or neglect on the part of school officials receiving money from the commonwealth, "reported or otherwise satisfactorily proved, shall be deemed sufficient cause for withholding the warrant for state appropriation of school money to which such districts or educational institutions would otherwise be entitled."

This is certainly "*what* shall be taught," and "*when*." In regard to the other provisions of the law, Pennsylvania is fortunate enough to have

school officials who are conscientious concerning the interests of the children and honest in interpreting the true intent of the law. The school laws and decisions of Pennsylvania (edition of 1899, page 234) say on these points: "The proper preparation of lessons assigned to the pupils . . . makes the use of text-books absolutely necessary, even if the law did not peremptorily require their general introduction, as it does." Also, according to the statement of the Pennsylvania Superintendent of Public Instruction, "Without the penalty, our temperance education law would have been a failure."

If the Connecticut officials had been equally concerned for the children of that state, it would not have been necessary for the people to ask for a stronger law, as they did in 1893. Whether the educators under the present weak law of Connecticut will improve

on their previous record remains to be seen.

Another respect in which, according to Mr. Ferguson, certain laws are too stringent, is that they require this instruction to be given *all* pupils in *all* schools. Why should it *not* be given, adapted, of course, to grade? All pupils in all schools are exposed to temptations; all pupils in all schools are continually forming habits. Why then deprive any of instruction which in many cases would be their only safeguard?

Mr. Ferguson advances no criticism of the temperance education laws which is tenable. A succeeding article will point out the fallacies in his criticisms of the text-book question.



"My strength is as the strength of ten,
Because my heart is pure."

*See October School Physiology Journal.

TEMPERANCE INSTRUCTION IN THE UNITED STATES

BY W. T. HARRIS, LL. D.

THE state of Georgia has recently adopted the law requiring temperance instruction in its public schools. This legislation has completed the list of states requiring, by statute, instruction on the effects of intemperance.

All persons with a knowledge of the situation will admit that it is very difficult to teach temperance in schools, and all will equally admit that such teaching is of the highest importance. Moreover, it must be total abstinence that is taught, and not a compromise which admits moderate drinking as the ideal to be reached. It is customary for teachers and superintendents of schools to criticise whatever instruction is attempted in the schools that has not yet been reduced to "pedagogical form." Many things thought necessary to be taught in the schools, such as manual training, cookery, temperance, and natural science, for example, have not, as yet, been reduced to the form of "progressive lessons." Arithmetic, geography, history, and grammar have been long since reduced to a "pedagogic form," and the first lesson or the first five lessons are good and valuable if no more lessons are given. The earlier lessons prepare the pupil step by step for the later lessons. In the new branches above mentioned, the necessary steps to connect one point with the next are lacking, and the instruction can not be made so thorough as it is made in the course of lessons in reading, writing, and arithmetic.

Admitting this, I think it explains the disparagements written regarding temperance instruction which we find in some of the reports of the superintendents of schools. On the other hand, I think that it will be admitted that instruction in what is called "scientific temperance," conducted as it is under the laws of all the states, in the public elementary schools, furnishes a permanent and active means for the dissemination of correct views regarding the effects of intoxicating drinks upon the human body. The pupils will have their attention called to the subject every year, and the intelligent ones will understand with some degree of clearness the results of scientific investigations in this matter. Even the dull pupils who fail to seize the scientific points will carry away an impression in their minds that intoxicating drinks are very dangerous and should not be used even in moderate quantities. It is an undoubted fact that a moderate use of intoxicating liquors is liable to lead, especially in predisposed organisms, to

alcoholism. Total abstinence is the only safe course for such persons, and no one can tell in advance what person can safely become a moderate drinker of alcoholic beverages in any form.

Dull pupils, and I may say all pupils, if taught by incompetent teachers, will fail to master the scientific evidence on which these conclusions are based. The examination papers of such pupils will provoke ridicule if made public. This is true not only in regard to temperance instruction, but in regard to instruction in all branches of natural science, manual training, history, religion, and whatever other branches of useful information are taught in schools without having first been carefully reduced to pedagogic form. But very useful results are attained in these subjects notwithstanding. The scientific temperance instruction required in the several states of this nation is certainly a permanent and efficient source for the promulgation throughout the community of correct opinion regarding the effects of intoxicating beverages upon the body. Such instruction, too, is sure to furnish the greater number of the intelligent pupils in schools with a tolerably correct notion with regard to the scientific investigations which have furnished the evidence for these conclusions. The utter destruction to the body and mind which comes from habitual intemperance, and the danger of moderate drinking in arousing an abnormal appetite for intoxicating liquors, will certainly be seen and understood by the great mass of pupils that attend the public schools. It may be said that this movement is the most effective one ever devised by the friends of temperance to abate a great evil, one of the greatest evils abroad in the land.—From *Report of the Commissioner of Education for the Year 1900-1901*.

The moral pulse-beat which we are waiting for is such a universal condemnation of drunkenness and dissipation of human power, that immorality will pass out of our public streets and out of our public resorts.—*The Independent*.

"It is the man that dares to be ahead of the times that in the end leads the times."

Patriotism is such a loving sense of the unity and the vitality of the national life as will lead one gladly to obey the law, to guard its dignity, to aid in its enforcement, to exercise a noble self-restraint, to cultivate civic virtues and political wisdom, to sacrifice, to suffer, and, if need be, to die for the country.—J. ELLEN FOSTER.

THE WORTH OF A BOY

BY NATHAN C. SCHAEFFER, LL. D.

State Superintendent of Public Instruction, Pennsylvania

WHAT is a boy worth? What is an education worth?

An Indiana jury awarded \$599.99 for the killing of a boy. A friend of mine, who is a superintendent in West Virginia, called that award an outrage. I asked him why. He answered, "To say nothing of the value of the boy's personality and all that a boy is to his father and mother and home, the commercial value of the boy's time at school is more than the award of that Indiana jury." I asked him how he made the calculation.

He said, "You find the value of a boy's time at school by subtracting the earnings of a life of uneducated labor from the earnings of a life of educated labor." Then he gave me a calculation that I have used this year before every institute, for I am anxious to get it into the daily papers, to have it carried to every schoolroom and put upon every blackboard, so that the pupils may carry it home and discuss it with their parents.

He said: "If an uneducated man earns \$1.50 a day for three hundred days in a year he does very well; and if he keeps it up for forty years, he will earn $\$1.50 \times 300 \times 40$, or \$18,000. An educated man is not generally paid by the day, but by the month and by the year. If you will strike an average of the earnings of educated men, beginning with the President of the United States, who earns \$50,000 a year, the presidents of the insurance companies and of large railroad companies, and run down the scale until you come to the lower walks in point of earnings among educated men, you will admit that \$1,000 a year is a low average for the earnings of educated labor. For forty years you have \$40,000 as the earnings of an educated man. Subtract \$18,000 from \$40,000 and the difference, or \$22,000, must represent the value of a boy's time spent at school in getting an education." You will all admit that the man who

works with his hands at unskilled labor puts forth as much muscular effort as the man who earns his livelihood by his wits and education. Now if \$22,000 represents the value of time that a boy spends at school in getting an education, what is the value of a day spent at school? The average school life of every boy and girl in Massachusetts is seven years of 200 days each; let us say that it takes four years more to get a good education. Reckoning eleven years of 200 days each, you will find that the 2,200 days at school are equal to \$22,000, and a simple division on the blackboard will bring it home to the comprehension of every boy that each day at school, properly spent, must be worth \$10.



"Oh, little loveliest lady mine,
Here is my heart for your valentine!"

One director asks whether it is a violation of the compulsory law if a farmer keeps at home his eleven-year-old boy to plow, because it costs \$1.00 a day to get some man to do the work. While he is putting \$1.00 into his own pocket he is robbing that boy of \$10. in the shape of future earning capacity. Is not that high-handed robbery by a father of his own child?—*American Journal of Education.*

"Every noble life leaves the fiber of it interwoven forever in the work of the world; by so much, evermore, the strength of the human race has gained."

A VALENTINE

Oh! little loveliest lady mine,
What shall I send for your valentine?
Summer and flowers are far away;
Gloomy old Winter is king today;
Buds will not blow and sun will not shine:
What shall I do for a valentine?

I've searched the gardens all through and through
For a bud to tell of my love so true;
But buds are asleep, and blossoms are dead,
And the snow beats down on my poor little head;
So, little loveliest lady mine,
Here is my heart for your valentine!

—LAURA E. RICHARDS.

A DESTROYER OF MEN

THE first and most seductive destroyer of most young men is the drinking of liquor. I am no temperance lecturer in disguise, but a man who knows and tells you what observation has proved to him; and I say to you that you are more likely to fail in your career from acquiring the habit of drinking liquor than from any or all the other temptations likely to assail you. You may yield to almost any other temptation and reform—may brace up, and if not recover lost ground, at least remain in the race and secure and maintain a respectable position. But from the insane thirst for liquor escape is almost impossible. I have known but few exceptions to this rule. . . . I implore you, hold it inconsistent with the dignity and self-respect of a gentleman, with what is due from yourselves, being the men you are, and especially the men you are determined to become, to drink a glass of liquor at a bar. Be far too much of the gentleman ever to enter a bar-room. You do not pursue your career in safety unless you stand firmly upon this ground. Adhere to it and you have escaped danger from the deadliest of your foes. . . . There is no use in wasting time upon any young man who drinks liquor, no matter how exceptional his talents. Indeed the greater his talents are, the greater the disappointment must be. . . . The men of the railroad world are to be congratulated on occupying the proud position, as I believe, of the most temperate body of employees in the world. They are an example to the workingman of other branches of the outspreading tree of labor, and their influence can not fail to prove of incalculable benefit. No rule that a man can adopt will bring greater regard than this, to abstain from the use of alcohol as a beverage. A drinking man has no place in the railroad system. Indeed, he should have no place anywhere.

My men are not required to be total abstainers, but all who are can obtain from me a gift equal to ten per cent of their wages with my best wishes, upon stating that they have abstained for the year.

I consider total abstinence men worth ten per cent more than others.—ANDREW CARNEGIE, in *The Empire of Business*.

A GOOD INVESTMENT

THE best possible investment a young man can make is in himself,—that is, in his own training and development for useful and effective work in the world. Opportunities nowadays are so numerous and varied that the young

man of health and determination may reasonably hope to make his way in the world without regard to any beaten path. But in one way or another he must become educated and trained for efficiency. The thing in general to be attained is power. The thing in particular is the special training of some kind that enables a man to make expert application of his developed force and ability. If trained capacity has been a valuable asset in the past, it becomes the one indispensable asset under the new conditions.—DR. ALBERT SHAW.

A Sunday school teacher after reading to her class the story of a generous child, asked them what generosity was. One little fellow waved his hand vigorously, and on being requested to answer said, "It's giving to others what you don't want yourself."—*New York Tribune*.

PHYSIOLOGY TOPICS FOR FEBRUARY

PRIMARY—Needs of the Body Externally: Shelter. Clothing. Sunshine. Voice: Use, Care, Training. Teeth. Pure Air and Breathing.

INTERMEDIATE—Food. Digestion. Assimilation. Brain and Nerves.

ADVANCED—Food. Tobacco. Skin and Cleanliness.

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THE SCHOOL PHYSIOLOGY JOURNAL

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CONTENTS

	PAGE
The Relation of Scientific Temperance to Popular Needs	97
Primary Lessons—First Year—Drinking	101
Grammar Lessons—Fourth Year—Alcoholic Drinks	104
Editorials	107
177 Drunkards a Year	110
Requisites in Making out a Course of Study	111
Book Notices	112
Physiology Topics for March	112

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MARY H. HUNT, EDITOR

VOL. XII. NO. 7
MARCH, 1903

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Vol. XII

BOSTON, MARCH, 1903

No. 7

AN EASTER GARLAND

BY CLINTON SCOLLARD

UNTIL the altars bring
The firstling flowers of spring—

The violet with evening's purple eyes ;
The valiant crocus-spear
That hath of frost no fear ;
The daffodil in morning's golden guise ;

The hyacinth, whose bells
Breathe fragrant spells ;
Hepatica sprays entwined,
And the shy wind-flower amorous of the wind !

One more fair bloom bear ye,
And let it be
As softly white as plumage of the dove,
The lily that's for love !

O ye that fare with faint and falling breath
Toward the dim gates of death,
Be these the heartening sign—
Quickened by God
Within the dormant sod—
Of resurrection and the life divine !

THE RELATION OF SCIENTIFIC TEMPERANCE TO POPULAR NEEDS

BY MARY H. HUNT

WHAT must be taught in the public schools to insure a nation free from intemperance?

That was the question the writer was asking before a temperance education law was ever asked for or enacted. Study of the testimony of science as to the nature of alcohol and its consequent effects upon the human system had led me to see that the alcohol problem must be solved if our boasted civilization is not to perish, and that education is the only solution. In a republic the people are the sovereigns, the source of power. Hence the strength and perpetuity of a republic depend upon the character of the people. Alcoholic drinks injure character, therefore their use is a menace to the republic, and as such must be prevented. Since a republic has no power with which it can compel majorities, such prevention can come only through education. Therefore, the inquiry with which this article opens matches in gravity the question, Can the Union be preserved? which faced Abraham Lincoln when he left Illinois for the White House, in 1861.

In trying to find an answer to the question, what must be taught, two other questions, each involving many others, had to be answered :

First, What is the truth about the character and effects of alcohol that the people should know?

Second, What are the wrong ideas that are leading the people to drink and that consequently must be corrected?

OUR DEBT TO SCIENCE

There are some remarkable coincidences in the history of our temperance education movement in the United States. At the same time that on this side of the Atlantic the question, What is the truth about the nature and effects of alcoholic drinks? was insistently pressing upon the one destined to plead for this education before the legislatures of this and other nations, across the ocean, in England, Dr. B. W. Richardson was making those wonderful experiments proving what has been confirmed again and again by later investigators concerning the evil nature and perilous effects of alcohol as a beverage. Thus first came answers to the question, What is true that can be taught the people? Scientific experimentation and human experience have each year added more new and confirming testimony to that of Dr. Richardson.

FALLACIES LEADING TO THE DRINK EVIL

If at that time the Woman's Christian Temperance Union had not come into existence and extended its branch organizations to towns and cities in every state and territory of the land, we could not have found the answer to our second question, What are the popular fallacies that are leading to the drink evil? Our public school temperance education would have been incomplete if, through lack of knowledge of what these popular fallacies are, it had furnished no evidence proving them to be such.

For three years, from 1879 to 1882, the Woman's Christian Temperance Union made engagements for me to speak on scientific temperance education in different parts of nearly every state in the Union. Entertained in the homes of the people, I was everywhere, with the help of local temperance workers and by direct observation, studying the habits and opinions of all classes concerning alcoholic drinks and narcotics,—the fashionable leisure circles, workingmen, employers and employes, people in the churches, hospitals, police courts, prisons, and reformatory institutions. Every-

where, if there was alcoholic drinking, I was searching for the answer to the question, What are the popular reasons for drinking?

Let no one say that I generalized from single cases, because space permits citing here only a few of the many incidents that daily showed the fallacies which must be corrected to save this republic from the destruction following in the wake of alcohol. The inference that I make individual experience the voice of science would be as unjust. The incidents I observed were the result of popular fallacies exposed by science, as I had learned from previous study in my effort to find what is true about alcohol.

THE FALLACY THAT ALCOHOL AIDS MUSCULAR WORK

A railroad accident late one afternoon left me some twenty miles from the town in a western state where I was to speak in the evening. Officials of the road kindly arranged for my finishing the journey on a hand-car, the only means available. Two men to work the levers that moved the wheels, and two more to relieve them at intervals, with the writer strapped into a stationary chair to avoid accident in swinging around curves, made up the passengers on that small open platform that sped across the prairie as the winter sun sank towards the west.

The men had heard that their passenger was a temperance lecturer, and one said, "I hope you will not think it out of place, madam, if I ask how is a fellow to do a piece of hard work like this without a brace to keep up his strength, such as Jim and I took before we started?" Quickly one of the other two replied, "You fellows took whiskey to help you do this job. We two did not. Now, let's see which can pull the longest and hardest."

At once their silver watches came out. From their knowledge of the road, distances were allotted and the two sets of relays worked on time. As the abstainers easily distanced the drinkers in both time and staying power, I pondered: "Here is a continent to be subdued, to become the home of untold millions, its limitless resources containing the raw material of boundless wealth to be developed and utilized. There must be a strong, achieving, virile race here to do this, and the people, east, west, north, and south, for I had before met the same notion, are thinking that alcohol furnishes strength that will help them accomplish their tasks." Into my notebook went the statement, One of the most important things to be included in the coming scientific temperance education is that the evidence shows that

Alcohol, even in small amounts, has a deleterious effect on voluntary muscular work.

THE FALLACY THAT ALCOHOL DOES NOT IMPAIR MUSCULAR PRECISION

The same year I was a guest in a respectable, well-to-do artisan's home in a watchmaking town where I had spoken the night before. After my host had gone in the morning to his work, and the children to school, the wife, a member of the Woman's Christian Temperance Union, said, "I thought last night I would tell you how I found out that alcohol injures ability to do fine work."

"When he had sobered up the first time, I told John I should leave him the next time he came home drunk. It was Thanksgiving Day. In spite of my entreaties he drove off in the morning, promising to be home to dinner sure. I cooked our turkey dinner, set the table with the pretty china mother gave me, dressed baby and myself, and waited and waited until after dark. Then he came stumbling in and fell upon the sofa, dead drunk. I covered him with a quilt and quickly putting on baby's bonnet and cloak and my own wraps, went out and engaged the expressman to come in two hours with wagons. A kind neighbor, who knew the horrors of a drunkard's home, helped me, and in less than two hours, with baby wrapped up and asleep in my arms, and the furniture of our pretty little home, which was all mine, I was on my way for a twelve mile ride to mother's. There was nothing left in the house but poor John, the lounge he lay on, the quilt that covered him, the stove in which I had left a good fire, and the untouched dinner on the otherwise bare pantry shelves."

"After a time John came after us, promising, and begging me to go back. I told him when I had proof that he had not drunk a drop for two years I would, but not sooner. The proof I asked was that he should send me each week a copy, made out at the office, of the statement of his wages. I knew that the clerk would give him an extra one if he asked."

"How was that proof?" I inquired.

"John is a piece workman on the finest watches," she said. "Somehow the men got the notion that drink helped them to turn off more. That is the way John began to drink. But drink didn't help, it hindered. I could always tell by the money he brought home Saturday night whether he had been drinking. When he hadn't, he made good wages and we had everything we needed and laid up something. If he drank only beer it made his hand unsteady and his fingers clumsy."

"For two years he sent me that statement every Saturday night, and I knew by the money he had earned that he had kept his promise. I told him not to send money to me. I worked

in the shop, taking care of myself and the baby, and he put his money into the house that was ready for us when the two years were up. The Christian people got after him, and he became interested in religion, joined the church," and with a look of great content, she said, "we have a Christian home now." And I put into my notebook, The schools must teach the people that

The use of even the weak forms of alcohol impairs the power of muscular precision, diminishing ability to do fine work.

It is now nearly fifteen years since the fact that alcohol injures working ability, with other truths, has been quite generally taught the children of the people of this country in the public schools. An article published in Belgium, England, France, Russia and Switzerland entitled *One Factor in the Industrial Competition of Nations* shows the result of that teaching.

THE FALLACY THAT
BEER, WINE AND
CIDER DO NOT CON-
TAIN ALCOHOL

In a beautiful home in the middle west, my hostess, who had just returned from European travel, said, as we talked over the previous evening, "I liked your lecture last night. It was very interesting, but how can you be right about beer? Why, it is liquid bread, and the wines of France made from their delicious grapes can not contain alcohol."

Farmers in Vermont, Michigan, New York, Pennsylvania, Ohio, and elsewhere said in substance what the man in one of the Massachusetts hill towns said: "It is all nonsense about my cider being an alcoholic drink. I made it myself from the juice of good apples that grew on my farm. I put no alcohol into it."

In another part of the country, a doctor of divinity invited with others to dine with me in the home where I was entertained, holding up a bunch of grapes, said, "How are you going to teach the people total abstinence, when there is alcohol in all the fruits? There is alcohol in these grapes."

Here is another providential coincidence.

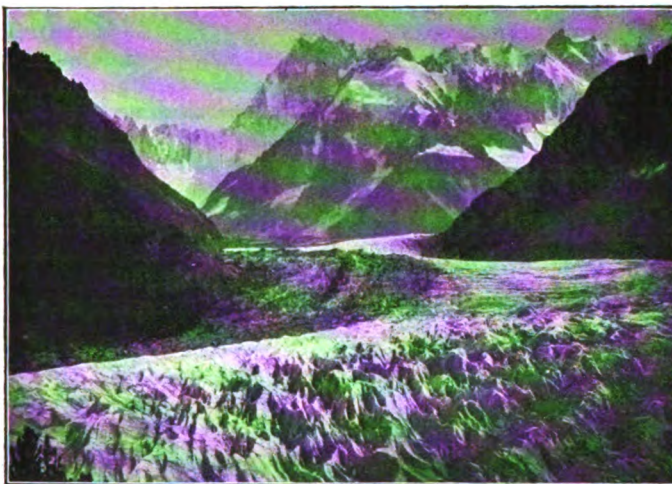
Pasteur and others made the discovery that alcoholic fermentation in cider and wine is the work of minute organisms called ferments which rest on the skin of ripe fruits, but do no harm until the juice of such fruits is pressed out. Then these ferments, washed into the juices, change their sugar to alcohol. He discovered also that the yeast which produces fermentation in beer is another kind of ferment, that changes the sugar in the malt solution in beer to alcohol. If these facts had not been discovered, we could not have corrected the almost universal fallacy that beer, wine, and cider must be good, because the fruits and grains from which they are made are good. Thus the conviction grew, that read in the notebook, The people must be taught that

Fermentation is a process of decay.
Alcohol is a product of fermentation.

As fermentation changes the character of the substance it works upon, the sugar in good fruit and grain juices is changed to alcohol, a poison.

THE FALLACY THAT
ALCOHOL INCREASES
BODILY HEAT

A painful experience showed the necessity of teaching the people that alcohol diminishes instead of adding



"A flowing solid of translucent ice, extended in the sunshine silently."

to bodily heat.

An early temperance education law was pending in one of the northern states. The expressman's horn and "all aboard" were the first sounds I heard at five o'clock the morning after speaking the evening before in a town way up on the Canadian line.

Hastily dressing, without breakfast, I jumped into the open sleigh, the only passenger in the vehicle called "The Express," to be driven ten miles to the railroad station where I could take the train for my next appointment. Snow had fallen during the night; the thermometer had gone below zero, and fierce winds had piled the snow in huge drifts. "Whisky is the only thing that will help a man stand cold like this," the driver said, proposing to stop to get some, as I supposed. Realizing the peril before us, with every power of persuasion, of truth, of entreaty, and of command I prevented him. It

was well I did, for the battle before us in that drive, with cold, snow drifts, and biting winds baffles description. As soon after that experience as my frost-bitten fingers could wield the pencil, the entry was made in the notebook, The people of this country of all zones must be taught why

Alcohol does not warm but causes cooling of the body.

THE FALLACY THAT ALCOHOL MAKES BLOOD

In a southern city, a lady confided to me that she was afraid drink was getting the better of her daughter. "Her blood and circulation were poor and we gave her wine as a medicine," the mother said. Then followed the oft told tale of the power of wine in debauching a naturally fine nature. So many times had I heard something like this, representing a fallacy that needed correction, that I put into the notebook, The people must be taught that

All the alcohol in the world can not make one drop of blood, and it impedes regular circulation.

THE FALLACY THAT ALCOHOL DOES NOT DULL THE SENSES

There had been a railroad accident in a state in the middle west that left me in a small city distant from my evening appointment. Going to the director's office to see what transportation was possible, I heard the following: The speaker, evidently the station agent, was saying to a man seated at the desk, "Yes, sir, that switchman had been drinking, not drunk, but one or two drinks aboard. You may think me a crank, but I am down on the road's hiring men who drink. They don't see quick or hear quick. If you'll look into it, I believe you will find that liquor is at the bottom of more than three-quarters of our accidents."

As a caboose attached to a freight train took me to my waiting audience, I recalled the railroad accidents, in one of which I was badly hurt, coming under my own observation during that itinerary, and the fact that quite generally through the country, when the cars stopped, the railroad men ran for a drink to the almost always nearby saloon, and I wrote in the notebook, the people must be taught that

Alcohol dulls the senses and thus unfits the drinker for responsible service.

For fifteen years the public schools have been so teaching, and for over five years the railroads of the country have demanded total abstinence of their employes.

(To be continued)

THE FASHIONER OF SPRING

In the dark of her chamber low
March works sweeter things than mortals know.
Her noiseless looms ply on with busy care,
Weaving the fine cloth that the flowers wear.

She sews the seams in violet's queer hood,
And paints the sweet arbutus of the wood.
Out of a bit of sky's delicious blue
She fashions hyacinths, and harebells, too;
And from a sunbeam makes a cowslip fair,
Or spins a gown for a daffodil to wear.

She pulls the covers from the crocus beds
And bids the sleepers lift their drowsy heads.
"Come early risers; come, anemone,
My pale windflower, awake, awake," calls she.
"The world expects you, and your lovers wait
To give you welcome at Spring's open gate."

She marshals the close armies of the grass,
And polishes their green blades as they pass.
And all the blossoms of the fruit trees sweet
Are piled in rosy shells about her feet.

Within her great alembic she distills
The dainty odor which each flower fills.
Nor does she ever give to mignonette
The perfume that belongs to violet.
Nature does well whatever task she tries
Because obedient,—there the secret lies.

—*Round the Year in Myth and Song.*

"The children who drop out of school at the end of the fifth year are usually those from the lower classes of society," said a school man as an excuse for taking the study of temperance physiology from the fifth grade. My indignation was at white heat that a man entrusted with the education of the people's children should so imperfectly understand his work, when my eye fell upon the ringing words of Mr. Walter N. Page:

"It is a shining day in any educated man's growth when he comes to see and to know and to feel and freely admit, that it is just as important to the world that the ragamuffin child of his worthless neighbor should be trained as it is that his own child should be. Until a man sees this, he can not become a worthy democrat nor get a patriotic conception of education; for no man has known the deep meaning of democracy or felt either its obligation or its uplift till he has seen this truth clearly."

MARY H. HUNT.



Primary Lessons

FIRST YEAR

DRINKING

IF the child's lead is followed in the order of topics taken up as lessons on the human body, that of Drinking will be one of the earliest to be considered.

Hardly an hour passes in any primary school-room without the familiar request from some child for a drink. Such chronic state of thirst is due to the fact that more than two-thirds of the body by weight is made up of water. This constant demand must be met in the growing child as in the adult, and in addition, the child needs an extra supply to provide for his continual increase in size and weight.

Since children, then, must drink, and oftener than grown people, what liquids shall be used to assuage their thirst? This is a vital question, and one in which the school must not only co-operate with the home in settling wisely, but in many cases even take the initiative.

Use tact in finding out how the children in your room are accustomed to satisfy their thirst. Sometimes this can best be done by playing tea party with them. Ask them to choose what they will have on their tea tables to eat and drink. If unsuitable articles are named in any case, tell them that wise parents do not allow their children to taste or drink such things, and give the reasons.

Instruction can thus be varied to suit the needs of the locality. In some rooms, it will be necessary to lay special emphasis on the undesirability of coffee or tea as drinks for children. In other cases, beer or cider may be the chief source of temptation, and yet again this may lie in the constant use of cheap sodas.

Do not make the mistake of trying to teach too much. A few thoughts clearly presented in the form of story or play, a strong, earnest word at the right moment will be all that little children can assimilate and act upon, but this little is vitally necessary for them, even more so, in fact, than elaborate instruction in later years after bad habits have been formed.

(1)

A PUZZLE STORY

My home was on the top of a high mountain where everything was covered with snow and ice.

It was cold and lonely up there. No trees or flowers were to be seen, and no birds ever came and sang.

Down in the valley I could see people and animals moving about, and beautiful green grass covering the ground instead of snow.

How I wanted to be down in that lovely valley! But it was a long way off, and I could travel only very slowly. You could not see that I moved at all, but I went as fast as I could, and after a long, long time I reached the foot of the mountain.

Now I could run instead of creeping along. The cold hard ice which had held me fast melted and disappeared.

Bright flowers sprang up all along my path, and tall trees crowded near and hung over me as if they too were glad I had come down from the mountain to be near them.

Sometimes I turned the miller's big wheel so he could grind his corn. Then I helped the farmer water his garden and his fields of grain.

I carried people on my broad back. Hay-makers and ploughmen were always glad to see me, and so were their hot tired horses.* It made me happy to give them so much pleasure.

Best of all, I loved the little children. Some of them came every day to play with me, and we ran races or went wading and swimming together. I sailed their little boats, and took them fishing, and when they were tired I sang them to sleep.

I am in every one of your houses. I keep them clean, and you too. You have me for breakfast, dinner and supper, and not one of you would want to get along without me for a single day. I am the best drink in the world for everybody, and my name is — Water.

LESSON TALK

Show the children the picture of the glacier reproduced on page 99, and trace with them its slow course down the mountain until the warm sun has melted the ice and left it free to run sparkling along as a brook, or spread out wide like a river. See picture on page 111.

How can a brook play with children? Tell some of the good times you have had with water.

But water can work as well as play. What have you seen it do? How does it help people?

Why are the grass and flowers so glad to have running water near by? What does it do for them?

*See picture on page 109

Ask those who have a plant of their own to raise their hands. How many of you ever forget to water your plants? What happens to them then? Why do they need water? Would anything else do just as well?

We can not live without water any more than our plants can. This is the reason why we feel thirsty so often. It takes water to make us grow and keep us alive. We can go without food longer than we can without water.

How many have seen a bird drink? Show how he did it. He looks as if he were very thankful for the cool clear water. Name animals that need to drink every day. All our pets need water, and we must never forget to put it within their reach. They can not tell when they are thirsty, as we can.

(2)

READING LESSON

(See picture on page 103)

One day two children met at the —.

They were about the same —.

It was summer time, and they were both —.

Each carried a — to be filled with — for breakfast.

"I got here first, so it is my turn before —," said Edmund.

"No, it's mine," said Gertrude, "because I am a —, and girls ought to have first —."

"Say —, then, and I'll fill your — for you."

"Please give me a — too, I am so —."

What good — it is, almost as cold as —.

It is the best drink in the —.

CLASS TALK

Let the class look at the picture of these two children, before giving the reading lesson with its omitted words for them to supply. Then let them talk about what they see in the picture.

What time of year is represented? How do you know it is not winter? How are these children dressed? What have they come for?

After brief discussion of the picture in general, focus attention on the running water. Where does it come from? What does it run into? What is the trough made of? Have you ever seen one like it? What is it for?

Ask where the water comes from which we use at home; at school. Show pictures of lakes and rivers, springs, the ocean. How does water for us to drink come from all these places, some of them many miles distant?

Take the children outdoors and show them the clouds in the sky. See how light these look, and how fast they can travel. They are carrying water from the ocean and rivers to dry places that need a good cool drink. When there they will come down in rain.

While emphasizing in these lessons the beverage use of water, encourage the children to name other ways in which water is a blessing as well as a necessity.

How does water help us to get dinner? Why do most people use more water on Monday than on other days of the week?

(3)

A TEA PARTY AT SCHOOL

Let us play tea party this afternoon. We will make believe that the desks are tea tables, and that you are the hosts and hostesses.

"What are you going to give your guests to drink, Ethel?"

"Soda water and lemonade," was the quick answer, as Ethel named her favorite beverages.

"They will like the lemonade, I am sure, and it will please them to think that you took the trouble to make it yourself out of lemons and sugar and water.

"What do the rest of you think about the soda water? Do you all like it?"

Every hand went up but one.

"What is it, Frances?"

"My uncle keeps a soda fountain and he used to let me have some every time I wanted it. But one day I drank too much and it made me sick. Mamma said it hurt my stomach."

"Your mamma was right. It is not a good thing for little people to have it often. Perhaps it will do to have it at tea parties once in a while, but it is not the best drink for every day.

"What is the drink on your table, George?"

"Mine is milk from a Jersey cow, and it has lots of cream on it," said George, whose father kept a fine dairy, and whose own pink and white cheeks showed that he drank plenty of just such milk every day.

"That is a good drink, and a food as well, so you will not need to offer your guests so many other things to eat.

"What is on your table, Dora?"

"Tea and coffee. That is what mamma has."

"Then I hope your guests are grown up people just like mamma's, because these drinks are not at all good for little folks. They are likely to make them cross and keep them awake at night.

"When I was a little girl I wanted to have tea at my parties. 'It won't be a tea party unless I do,' I told my mother."

"Very well," she said, "you may make cambric tea. That belongs to children's parties, just as green and black tea belong to grown people's parties."

"Mine is cambric tea, too," said Dora.

"That is right. I know your company will

be glad to have you offer them the proper kind.

"What have you, Jamie?"

"I have beer."

"Oh, dear me! I don't know what your guests will say to such a drink as that. They will think you have never been to school, or you would know that beer is not good for any body to drink."

"It does not make people strong or good tempered or keep them well. But it often does make them like it so well that they can not stop drinking it."

Jamie's mother wit rose to the occasion.

"I thought at first I'd have some beer," he said, "and then I remembered it was not good for people, so I made some cocoa just before the folks got here."

"Cocoa is much better. If it happens to be a cold day, it will be a nice hot drink for them."

"But people can drink lemonade, and milk, and cambric tea and cocoa and still be thirsty. What is the drink that always satisfies?"

"Yes, water. So we'll always have this best drink on our tables no matter what else we have."

THE DANGER IN BEGINNING TO DRINK

It is not enough to warn children against immoderation; that is not the beginning. It is not enough to warn them of the dangers of drunkenness: The school must teach them that even the regular and moderate use of alcohol is injurious to the health and impairs physical and intellectual activity.

The school ought to uproot old superstitions. Children must be shown that alcoholic drinks, even taken in small and diluted amounts, diminish the capacity for physical and intellectual work, and that the feeling of increase of strength experienced after taking alcohol is but an illusion. Total abstinence, therefore, must be the foundation of anti alcohol teaching.

But the co-operation of teachers is essential. The personal attitude of the teacher is not a matter of indifference, especially in matters in which indifference and prejudice are still com-

mon. The teacher ought to speak not only from a sense of duty but from a warm personal conviction.—R. THURNWALD, M. D., Berlin, in *L'Abstinence*.

We shall never control alcohol until we have taught the people first—what alcohol is; second—what it will do for us if we drink it; third—what it will make us do: and I can see no way that this can be done but through the schools.—WILLARD PARKER, M. D.

HALF A PINT OF BEER

BY J. J. RIDGE, M. D.

"Half a pint of beer won't do anybody any harm." So said a broken-down, bleary-eyed individual to whom, no doubt, half a pint was not much more than a mouthful.

If there was but one half pint of beer in the world, and no possibility of making or getting any more, it might, perhaps, go down some red lane or other without any serious consequences. But the solitary half pint is a myth, and, in pleading for one, our beery friend had his eye on a long series of half pints, which, if one were allowed to be smuggled in, would plead the precedent, and join the first in the region within. Hence, the question is not simply what one half pint can



"Say please, first!"

do or not do. Half a pint today means half a pint tomorrow, and the next day and the next, and so on, day after day, week after week, month after month, and year after year. Nay, it often means more than that. The half pint for dinner paves the way for the half pint for supper; the half pint this year often means a pint next year, or, in too many cases, half pint after half pint, or even pot after pot.

Then, again, the innocent half pint of beer is the excuse for something stronger on occasion—the glass of wine or glass of spirits. So the half pint is but the camel's nose, and behind that is the camel's head, and his neck and his whole body. The invited guest becomes the tyrant who means to stay.



Grammar Lessons

INTERMEDIATE WORK

ALCOHOLIC DRINKS

A SUCCESSFUL hotel keeper was urged to open a new hostelry on a tableland overlooking the beautiful Cumberland Valley. From a scenic point of view the site was matchless, but the experienced manager shook his head.

"It would not pay," he declared. "Women and children are my best patrons, and no mother would bring her children up here. It is too near yonder precipice, and that can never be made safe for little folks."

With equal sagacity the enlightened commonwealth allows no saloons to be opened within certain distances of its schoolhouses. It knows that no place in which alcoholic drinks are sold, even the most gilded and outwardly respectable, can ever be made morally safe for children, and to this extent, it seeks to remove the temptation.

Such restriction is good as far as it goes, but as long as the drink evil abounds in the land it is necessary also to develop the child's powers of self-control, that he may be able to withstand its attacks whenever and wherever he may meet them. Knowledge is a far more potent factor than mere command in attaining this end. Tell a child he should not drink beer or cider, and his immediate reply will be, "Why not?" and with reason. This is a perfectly legitimate question and should be so treated, by explaining simply and clearly the nature of these drinks and the cause of their inherent danger.

Probably all fourth year pupils who have had instruction on the subject in the lower grades will know that beer is made from grain, and wine and cider from fruits. They may not have learned, or they may have forgotten, why such drinks should be denied them, when at the same time they are allowed and even urged to eat the fruits and grains from which these very liquors are made. In that case, the first topic to take up in connection with the subject in this grade is the

(1)

CHANGED NATURE OF FRUIT JUICES

Some hours before the lesson is to be given, pare an apple and cut it into small pieces before the class, leaving it on a plate in full view of them all until time for the recitation.

Begin the lesson by asking some one to describe a ripe apple, its color, size, shape, parts. How do we know an apple from other fruits? Of what color is the juice? If there is any one who is not sure on this point, he may be asked to get an apple and find out at home for himself.

Turn to the cut-up apple which has been standing near. Of what color are the pieces now? What change has taken place in their color since the apple was first pared? What further change would take place if the pieces should be left standing in a warm place several days or weeks?

Call for a brief description of grapes and pears, covering the same points as were brought out in the case of the apple. What changes would take place in these fruits if they were cut open and allowed to stand?

Ask the class to name other foods besides fruits which change in color and general appearance if left uncovered in a warm place for some time. Tell about the change which takes place in bread under such circumstances; in milk, meat, cheese. Do any of these things look, taste or smell as they did before? Why not?

Not one of these things would spoil of itself, but floating all through the air are the seeds or spores of tiny plants much too small to be seen, some of which get on our food and begin at once to change it.

The particles which spoil bread and cheese are called moulds. Those which change fruit juices are ferments. Have some in the class look up the word ferment in the dictionary. They will find the first meaning is to boil or bubble up. Explain that we usually speak of hot liquids only as boiling, but in this case bubbles are formed at the bottom of the cold juices and come floating up to the top just as they do in boiling water, so we use a term that means the same thing and say that such a liquid is fermenting. For the same reason, the tiny particles which make this disturbance are called ferments.

When the meaning of the word is clear, ask the class to open their books and find what these little ferments do when they get into fruit juices. Have the entire passage read aloud. This will give a chance to explain in fuller detail any point the meaning of which is not at once apparent.

As a result all should get these thoughts:

There are tiny particles called ferments floating in the air.

Some of them fall into fruit juices when they are pressed out and left standing.

When they once get into such juice they begin at once to change it.

It no longer tastes sweet and good.

Two new substances have been formed in it, a gas which bubbles up to the top and disappears in the air, and alcohol which stays in the juice.

It is the alcohol which changes the nature of the fruit juices and makes them no longer good for food.

(2)

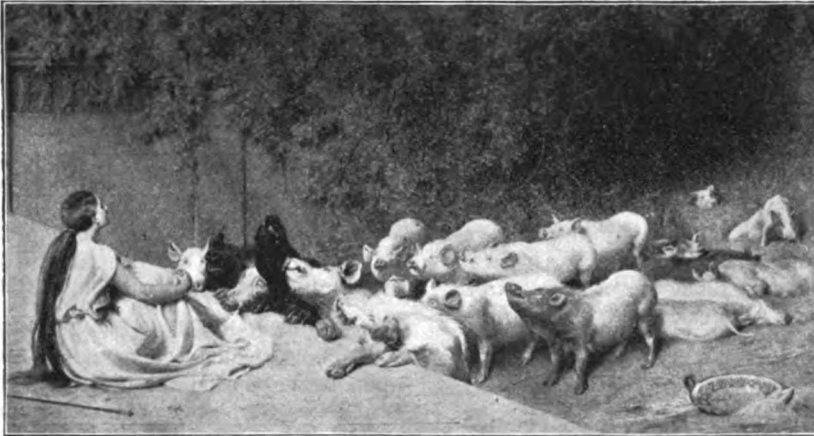
DANGER IN BEER, WINE, CIDER

Outline on the board, using colored chalk, a basket filled with fruit of different kinds, writing

stronger or healthier in any way? Refer the class to their books on this point also, to find whether such drinks can make blood and bone and muscle; and whether one who uses them is able to do more or better work than if he should let them alone. Have all the passages bearing on these points read aloud, getting the opinion of the class on each.

When they have learned that there is nothing in any of these drinks that can be of the slightest use to them, put on the board the additional question, In what ways do beer, wine, and cider harm the body?

While all the research work thus far suggested should be done under the guidance of the teacher, and as a class room exercise, the constant aim should be to make the class familiar with books adapted to their grade, and increasingly independent in the use of the same. The first step to this end is to show them how to



Circe and the companions of Ulysses

underneath the question, Why do we eat ripe fruit and other kinds of food?

Get answers from as many in the class as possible, referring them to the chapters on food in their books if necessary, in order to bring out such facts as these:

We eat to keep us alive.

To keep well.

To make our bodies grow.

To get strong.

Write the answers which are finally accepted where they can be seen by all, then add other questions to the first, such as, Why do we play? Why do we study? Why do we work?

Some poor or insufficient reasons will probably be given, but in the main the class should agree that food and work and play and study are all necessary to make strong healthy men and women of the sort we all want to be.

Is there anything in beer, or wine, or cider that helps one to grow, or that makes people

find any topic at will; the next to read the different paragraphs so understandingly that they can give the substance of each in their own words.

Following this method with each question suggested above under the general topic, the danger in wine, beer, and cider, the class with very little help from the teacher should reach conclusions similar to the following, based on their own research work:

Wine, beer, and cider do not build up the body as food does.

They do not make it stronger or healthier.

They do not help one to live longer or better.

They do not aid the growing child.

Every one of these drinks contains more or less alcohol.

This alcohol has the power to create such a desire for more that it is hard to give these drinks up after one has begun to use them.

(3)

EFFECT OF ALCOHOL ON SELF-CONTROL.

Tell the story of the adventures of Ulysses' companions on the island of Aea, or use the same as a supplementary reading lesson in connection with these topics in physiology.

Emphasize the fact that Ulysses' companions were brave, strong men until they had eaten the food of the enchantress and drunk her wine. What happened to them after they had yielded to this temptation? Show the picture reproduced on page 105. What was the reason that Eumolpus escaped being changed into one of the swine?

Is this a true story? Why not? What is true about it? How does wine-drinking often affect people today if they indulge in too much of it? Why can not one take just a little of such drinks and stop before he has had enough to make him look or act silly?

Bring out this last point very clearly. When people eat bread and milk, or meat and potato, they can easily stop when they have had enough. It no longer tastes good to them. But when one takes a glass of wine or any other liquor which has alcohol in it, he never knows whether he can let it alone after that, or not. He may possibly be able to do so, but the chances are that he will get to like it so well that he can not give it up. This is because alcohol can destroy his power of self-control.

Explain what we mean by self-control. It is being able to manage ourselves, to make ourselves do what we ought. When one tastes any liquor that intoxicates, he is in danger of losing this power, just as Ulysses' companions did, and then he too will cease to be truly manly.

Lowell tells us,

"In life's small things be resolute and great,
To keep thy muscle trained."

He does not mean the muscles in our arms or legs, but our power of self-control. This can be trained and developed just as well as our bodies can, and it will be worth infinitely more to us.

AUTHORITATIVE QUOTATIONS

ALCOHOL IN BEER

Is beer not made from grain which is highly nutritive? Oh, yes, but the nutritive element in the grain is almost completely destroyed in its conversion into beer, so that it is practically robbed of its food properties, leaving the beer chiefly water and alcohol. — H. D. MANN, M. D.

ALCOHOL IN WINE

Two of our finest California wines contain tablespoonfuls of alcohol in a pint. One

much vaunted American wine has a little over eight tablespoonfuls of pure alcohol in one pint. One brand of port contains seven tablespoonfuls of alcohol to a pint. One French wine, imported and much advertised, contains five tablespoonfuls of alcohol to a pint. The lightest wine, a California brand, contains four tablespoonfuls of alcohol to a pint. — C. A. GREENE, M. D., in the *Medical Record*.

ALCOHOL IN LIGHTER LIQUORS

Alcohol is the intoxicating ingredient in all spirituous liquors, including under this term wines, porter, ale, beer, cider, and every other liquid which has undergone vinous fermentation. — *United States Dispensary*.

ALCOHOLIC DRINKS INJURE THE BRAIN CELLS

Alcohol destroys first and most those parts which are most delicate and most recently developed, the wonderful brain cells. Whoever, then, gives wine or beer to a child, injures these delicate structures in their formation, and thoughtlessness, flightiness, passion, coarse sensuality, and all base characteristics attain domination. — FRANZ SCHONENBERGER, M. D., Bremen.

Doses of one fourth to one half an ounce of alcohol, which correspond to a glass of wine or a pint of German beer, are sufficient to paralyze, retard, or disturb the central and centripetal brain functions. — AUGUST FOREL, M. D., Zurich.

ALCOHOL CRIPPLES BODY AND MIND

Alcohol produces its most destructive effect upon the nervous system of the child. There is no surer method of producing idiots than by the continual administering of alcohol, which renders them stupid, listless and lazy, crippling them in mind and body. — EMIL KRAEPELIN, Heidelberg.

ALCOHOL DESTROYS SELF-CONTROL

My experience is that no substance wastes and destroys brain cells and impairs the tissues so rapidly, even when taken in moderation, as alcohol and its compounds. Alcohol destroys the moral sense and self-control. — DR. CLOUSTON, Edinburgh.

A subtle red
Of life is kindling every twig and stalk
Of lowly meadow growths; the willows wrap
Their stems in furry white; the pines grow gray
A little in the biting wind; midday
Brings tiny burrowed creatures, peeping out
Alert for sun.

Ah, March! we know thou art
Kindhearted, spite of ugly looks and threats
And, out of sight, art nursing April's violets!
— HELEN HUNT JACKSON.

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"The bushes struggle to peer
Through the crusted snow;
They listen and lean to hear
The brook below."

SOME UNTENABLE CRITICISMS ON THE INDORSED PHYSIOLOGIES

BY MACY A. SMITH

State Superintendent of Scientific Temperance, Ohio

IN the February issue of the JOURNAL certain untenable criticisms of Superintendent W. B. Ferguson on the temperance education laws, now universally in force in our country, were considered. The present article deals with his charge that the Woman's Christian Temperance Union is responsible for inferior text-books in physiology and hygiene.

We would respectfully remind our critic that the schools are indebted to the Woman's Christian Temperance Union for the introduction of any text-books whatever on this subject. Twenty years ago there was practically not a single work in existence for grades below the high school and exceedingly few for high schools. The passage of the first laws requiring the study of physiology and hygiene, with special reference to the effects of alcoholic drinks and other narcotics, made it necessary that the required instruction be so formulated that it could reach the childhood of the land. In other words, if this movement was not to fail, the facts the laws required taught must be put into well graded text-books for school use.

The Pathfinder Series was the first to meet these requirements, and it must be remembered that these books were in very truth *path-finders*. Up to the time when these books were issued, practically no facts of hygiene, to say nothing of those concerning the effects of alcoholic drinks and narcotics, had been available for grades below the high school. A readable book for little children which devoted even five lines to exercise would be a distinct advance over any-

thing which had appeared thus far. As a matter of fact, however, the Pathfinder primer which Mr. Ferguson thus criticizes, discusses the value of exercise in four different chapters, including in all between two and three pages of matter.

ALLEGED FALLACIES IN THE TEXT-BOOKS

As soon as temperance education laws had been enacted by three or four states, publishers who had once scoffed at the idea of issuing text-books for the different grades perceived that there was really to be a demand for such books. They forthwith rushed upon the market books for lower grades prepared by the expeditious and convenient method of binding together a few pages selected from their old high school books, labeling the result a primary or intermediate text, as the case might be, size alone seeming to be their criterion.

Common sense and vital interest in the welfare of the children led the friends of temperance to protest against such an absurdity, and to work for the revision of these unworthy books or the substitution for them of better works. It is just here that Mr. Ferguson claims the temperance people made their first great mistake. He says that "in revising the physiologies the greatest care should have been exercised not to include in them any statements concerning alcohol and other narcotics which do not square with scientific truth." These revised books, however, in his opinion, "instead of being scientifically accurate, contain statements that contradict both science and the every day observations of men."

ALCOHOL A POISON

He claims that the question of whether alcohol is a food or a poison "is a purely academic one, and its discussion should have no place in the teaching of the public schools, at least in the lower grades." He is evidently ignorant of the well-known fact that a large class of those who use beer and similar alcoholic drinks do so under the delusion that they are nourishing, and that they are thereby consuming "liquid bread." This delusion they are passing on to their children, babies in the cradle as well as those who have reached the "academic" age.

Many a child is sent to school after a breakfast or lunch in which beer has played an important part. Should such children be kept in ignorance of the fact that alcohol is not a food? In all probability they will never reach the upper grades, where Mr. Ferguson grudgingly concedes that such instruction may possibly have a place.

He criticizes the statement in one of the indorsed books that "alcohol is a virulent poison, and should be classed with arsenic and mercury," as though it were given on the

authority of the book alone, instead of being, as is the case, a quotation from Dr. Carpenter of the University of London. Mr. Ferguson's sole reasons for disagreement with this statement are that druggists do not put the "Poison" label on a bottle of alcohol, and that it is a mooted point among scientists whether alcohol acts like a poison when taken in small quantities. The fact that druggists do not label alcohol a poison is no reason why they should not. It is well known that children who inadvertently drink the contents of such a bottle invariably suffer severely, even if they escape death.

Mr. Ferguson's contention that alcohol may not be a poison on the ground that in small doses it does not always act as such is only saying that substances commonly known as poisons are such only when taken in large quantities; that when taken in small quantities they lose their poisonous characteristics. Would Mr. Ferguson say that arsenic and strychnine, for instance, are not poisonous because sometimes administered by physicians in small doses? Even one and one-half ounces of alcohol have been known to produce fatal results.

In support of his assertion that "alcohol is one of the weakest and slowest of poisons," Mr. Ferguson produces only his own solitary assertion. On the other hand, Taylor, Motet, Fick, Forel, Osler, Sir Andrew Clark, Blocher, Kassowitz, Woodhead, Madden, Anders, Riche, Dujarden-Beaumetz, Destrée, Kræpelin, Bunge, Kerr, Rosenfeld and many others agree substantially with Alexander Wynter Blyth who says in the latest edition of his great work on *Poisons*, "If we were to include in one list the deaths directly due to chronic as well as acute poisoning by alcohol, it would stand first of all poisons in order of frequency."

OXIDATION OF ALCOHOL

Mr. Ferguson criticizes another indorsed physiology for giving "the impression that alcohol passes through the different organs of the body unoxidized and merely mixed with the blood, adding, "That to teach by implication that alcohol is not oxidized in the body, but always passes through it unchanged is to teach untruth."

The book in question nowhere teaches that alcohol is not oxidized in the body, neither does it teach that all of it always passes through the body unchanged. Even Professor Atwater showed* that when alcohol is taken a portion of it is eliminated unchanged, and that is exactly what the book states. Mr. Ferguson seems to assume that because alcohol is said in this book to be mixed with the blood it can not therefore be oxidized, and that consequently

the book is teaching untruth. Will Mr. Ferguson explain how alcohol can injure the heart, brain and other organs of the body, as it unquestionably does, without first being carried to these organs by the blood? or how it can be conveyed to the tissues, where the best physiologists believe that oxidation takes place, unless it is carried thither by the blood?

THE TOBACCO QUESTION

The statement criticized "that tobacco has done more to cause insanity than spirituous liquors," was included in one of the books as the statement of the superintendent of a large insane asylum and was therefore supposed to be authoritative. Later investigations do not seem to support this view, and the writer is informed that the author was long ago asked to change the statement. The same recommendation has been made with regard to the opinion ascribed to Dr. Seaver concerning the invariably serious injury caused by tobacco, and the statement that "the majority of beer-drinkers die from dropsy."

There is room for other opinions than that of Mr. Ferguson as to the comparative harm wrought by tobacco and rum, and also concerning the effects of tobacco on personal habits and morals. The average teacher finds to her sorrow that tobacco is demoralizing, and that it impairs both mental and moral ability in those pupils who use it. Moreover, the statement quoted from Dr. Parker that tobacco 'does more harm than rum, taken in its largest sense, is confirmed by the testimony of other careful students of the question. One would be sorry to think that the sensitiveness shown in Connecticut on the tobacco question is in any degree due to the great tobacco industry in that state.

THE TEACHER AS THE SOURCE OF INFORMATION

Apparently the teacher is a more authoritative source of information than the text-book, to our critic's thinking. The new Connecticut law also seems to regard the teacher in this light since, to quote Mr. Ferguson's own words, "it does not require the use of text-books by pupils." Thus is substituted the verbal statement of any and all teachers, no matter how meagre their preparation, for that of the text-book. The teacher's word, though it may be inaccurate, can and often does escape unchallenged. Every statement in the text-book, on the contrary, is open to the critical eye of the public, and any inaccuracy is almost sure to be noted and thus can be corrected.

ADDITIONAL CAUSES OF DISAPPROVAL

But the chief cause of disapproval by teach-

* *Memoir of the National Academy of Sciences*, p. 259.

ers of the indorsed physiologies, our critic says, is due to the "spirit of exaggeration that pervades them, to the large amount and unwise distribution of the temperance matter, to the emphasis placed upon facts that appeal to fear, and to the disregard of facts that appeal to manliness and the moral nature."

THE SPIRIT OF EXAGGERATION

It is impossible to admit or deny the "spirit of exaggeration" said to characterize the books, unless specific statements of a "misleading nature" are given, and these are entirely lacking in Mr. Ferguson's article, except such as have already been noted. It is very easy to condemn when one does not feel obliged to pin himself down to definite statement.

UNDUE SPACE GIVEN TO TEMPERANCE

As to the alleged undue proportion of space given to alcohol and other narcotics, it should be noted that the books specifically criticized in this regard are those earliest written, when there was almost universal popular ignorance of the nature of alcoholic beverages or their effects on the human system. A relatively large amount of space was therefore necessary to meet this need. Neither Mr. Ferguson nor any other critic can prove that this amount, which he sweepingly calls "excessive," failed to accomplish its mission.

On the other hand, there is much positive evidence that the temperance teachings of these books, so far from "killing all interest in the subject, causing disgust, and doing moral injury," have been and still are productive of widespread good. As knowledge of the scientific facts underlying total abstinence became better classified and organized, it was found that the subject could be adequately treated in a minimum of one-fifth the space in the books for lower grades and twenty pages in high school texts. Examination of later books will show that they practically conform to this estimate.

CHILDREN WEARIED OF THE SUBJECT

Whenever complaint has been made that

children have grown tired of the subject, investigation almost invariably shows that the fault is not in the subject matter itself, but in the indifference of the teacher or her failure to present the subject properly, due perhaps to her lack of training; or to the use of books not adapted to grade, or of the same book in too many successive grades; or to the failure of school officials to provide for the teacher a topical outline showing the new facts to be taught each year.

THE APPEAL TO FEAR

Mr. Ferguson's final denunciation of the books is that their teaching is chiefly negative, appealing to fear, and that little emphasis is placed on "the beauty, nobility, and strength of a temperate life."

The injustice of this criticism is well shown by such statements as the following, quoted from the very books which he denounces:

"If well cared for, your brain will do the best of work for you for 70 or 80 years without complaining."¹

"A body kept pure and strong is of great service to its owner."¹

"Some people have little or no money, and no houses or lands; but every person ought to own a body and mind that can work for him and make him useful and happy," etc.¹

"Our present study will teach us how to preserve life, and how to keep our bodies



At the Watering-Trough

strong and healthy."²

"Every time one does right it is easier for him to keep on doing right, because he strengthens that part of his brain which is used by the good powers of his mind," etc.²

"The endeavor should be to develop all parts of the body equally well."³

"It is because a healthy body is such a great aid to a vigorous mind, that an abundance of exercise is so persistently urged."³

"As the mind grows and expands, it ought, under proper guidance, to bring forth all that is highest and best in man."³

¹ Pathfinder No. 1.

² Pathfinder No. 2.

³ Essentials of Health.

(Continued on third page of cover.)

177 DRUNKARDS A YEAR

THE law of Massachusetts requires that "all pupils in all public schools" shall be taught, "as a regular branch," physiology and hygiene with special reference to the effects of alcoholic drinks and other narcotics upon the human system. The object in requiring this study for all pupils in all schools is to secure to every child a progressive education in the laws of health, including those that teach total abstinence.

Nevertheless, the Massachusetts Committee of Twelve has proposed to recommend that this study "as a regular branch" be omitted in the fifth and seventh school years, and be put into the ninth year instead.

To find the effects of this proposed recommendation a personal letter was sent to the superintendents of public schools in all towns and cities of 1000 inhabitants and over, in Massachusetts, asking the number of pupils in each grade (year) of their schools. Official reports from 181 towns and cities, 68 per cent of the whole, were thus obtained.

These reports show how wise are the requirements of the law, and how materially its intent would be evaded by the above recommendation, because

1. There are 41 towns which have no ninth year in their school course.

2. There are 21,471 less pupils in the ninth year to get this instruction than there are in the fifth year, and 11,584 less in the ninth than in the seventh. The schools in the fifth and seventh years must be a part of "all schools," and the pupils who evidently drop out at the end of the fifth and seventh years must be among the "all pupils" whom the law says "shall be taught this study as a regular branch."

These school reports further show that there are 4,445 more pupils in the fifth year where no regular study of this subject is proposed, than in the sixth year.

Allowing that 20 per cent of this difference between the fifth and sixth years can be accounted for by the skipping of grades, the failure to pass of children who will reappear in the sixth grade, or changes in population, there are still left 3,556 children who yearly leave school for the battle of life at the end of the fifth year. Certainly one half of these, 1,778, are boys.

From existing history of the drink curse, experts estimate that one boy in ten will be a drunkard. Thus, on the plan of the Committee of Twelve, over 177 boys *yearly* would leave the fifth grade of the Massachusetts schools to become drunkards, having had no systematic instruction in that grade in the physiological reasons for total abstinence and never any

books in this as they have in other studies, all of which would have warned them against beginning to drink, saving some, if not all.

In addition to these 177 boys, we may estimate an equal number of girls doomed to become drunkards' wives, mothers of drunkards' children, thus perpetuating alcoholism.

It is true that the majority of the Committee of Twelve, have advised oral instruction in the first four school years, but have also recommended that this study shall be "without the use of text-books in the hands of pupils" in the fourth year, even though such pupils have books in other subjects.

Thus the pupil will have no aid of a book as one source of information until the sixth year.

When the majority of the Committee of Twelve are pressed for a reason for wishing to exclude text-books in this study from fourth year pupils, and all regular study of this subject from the fifth and seventh years, their only reply has been, "The teachers desire it and will teach the subject with more interest if the course is made out the way they want it."

Reluctant to believe that a majority of the educators of Massachusetts so understand their legal and moral obligations to the children under their care, a letter was sent to superintendents and principals of schools throughout the state, presenting the case and asking three questions, answers to which are still coming in.

The first question in substance was,

In view of the facts, do you approve of taking the study of temperance physiology, as a "regular branch," from the fifth year?

72 per cent of the answers received say "No," many of them emphatically.

The second question was,

Are you opposed to well-graded books on temperance physiology for fourth year pupils who have books on other subjects?

56 per cent of the replies say "No."

The third question was,

Inasmuch as there are 21,471 more children in the fifth year than in the ninth, and 11,584 more in the seventh than in the ninth year, and in 41 towns and cities there is no ninth school year, do you approve putting the study into the ninth year instead of into the fifth, and, in addition, omitting it from the seventh year on the plea that the pupil will get the equivalent in the ninth?

69 per cent say "No" to this question.

Thus fails the reason given, "the teachers want them," for these most unwise recommendations; while the obligations that rest upon law-abiding citizens and upon the lovers of children who would save them from the horrors of alcoholism utter their solemn protest against such a policy.

MARY H. HUNT.

REQUISITES IN MAKING OUT A COURSE OF STUDY

ABILITY to make out a good course of study in physiology and hygiene, as now required to be taught all pupils in the public schools throughout the United States, depends upon thorough knowledge of the subject matter, upon the pedagogic sense which can arrange and adapt this matter to the progressive needs of the child, and upon a keen sense of the relation of this instruction to individual and national welfare.

KNOWLEDGE OF THE SUBJECT

The necessary knowledge of the subject matter includes:

First, Knowledge of the anatomy and physiology of the human body.

Second, Knowledge of the hygiene, or the laws of health of the different organs, showing what is necessary, as well as injurious, to such health and thus to the effectiveness of the body as a whole; and comprehension of the fact that intelligent ideas of hygiene are impossible without knowledge of anatomy and physiology. The engineer must understand the structure of his engine in order to take intelligent care of it and run it properly. To understand how to care for the health of the body, one must know what its organs are and the functions of each. Hygiene without anatomy and physiology consists of mere dogmatic rules.

Third, Knowledge of the origin, character and effects of alcoholic drinks and other narcotics. It is axiomatic that such knowledge of the facts which the laws require taught as a part of general hygiene is necessary, in order that the facts may be properly correlated and outlined for the various grades to which they are adapted.

THE PEDAGOGIC SENSE

In addition to full knowledge of what is thus to be taught, there is also necessary

First, The pedagogic sense that comprehends

the fact that physiology and hygiene, which includes the nature and effects of alcoholic drinks and other narcotics, is a progressive subject from which should be selected

a. Elementary truths simply stated and adapted to the child's comprehension, which he needs to know, and which can be taught orally in the primary years.

b. Fresh matter for every grade, to guide the pupil's habits that are continually forming, new ones each year. Thus, without unnecessary repetition, new and important information can and should each year be added to the child's store of practical knowledge, to aid him in the intelligent care of his body that it may be his useful servant.



"The brooks and the rivers have broken the chain
That held them in icy thrall."

All pupils can understand more of these truths in the fourth year than they could in the primary grades, and more in the fifth year than they could in the fourth. The same is true each successive year until the subject is covered, as it can be in thirty or a maximum of forty progressive oral lessons per year in the three primary years, and an equal number of well-graded lessons per year, with the help of books as in other studies, through the five years in the grammar and first year in the high school. Few cigarette victims will be found among pupils who have had such a full course of study in physiology and hygiene as is thus outlined. As to the value of such regular instruction as compared

with mere incidental teaching, a superintendent of schools in a Massachusetts city recently said: "I agree with what you say against substituting incidental instruction for regular classroom study in this subject. The results of incidental instruction are ordinarily accidental."

Second, The pedagogic sense that recognizes the fact that the schools furnish three sources of information to the child,—the *teacher*, the *book*, and *observation* including experimental work. Where any one of these sources of knowledge is withheld, as the child progresses far enough to profit by it, there is a loss in results.

Objectors to text-books on this subject in the hands of pupils who have books in other studies give no adequate reason for their opposition. Pedagogics as well as morals demands that the pupil, instead of being denied any source of knowledge, shall have the utmost instruction in all laws of health, together with those which warn him against the cigarette, drink, and other destructive habits.

Third, The pedagogic sense that applies the facts revealed by statistics of school attendance in the United States showing that a very large proportion of pupils attend school only about five years of 200 days each. To postpone this study until the sixth year, or later, is to withhold from large numbers, and those most needing it, even in states having the highest school attendance, knowledge of the physiological reasons for the laws of health and total abstinence.

CONSCIENCE AND PATRIOTISM

Lastly, whoever attempts to make out a course of study in this subject needs a conscience that can appreciate and respond to the obligation to provide the utmost warning instruction that will guide all the children safely past the many pitfalls which beset their path. He needs also a patriotism that will gladly prosecute the work committed by the nation to the teachers of its children, namely, saving through education the republic from the corruption of its people by alcoholic, narcotic and other unhygienic habits.

MARY H. HUNT.

BOOK NOTICES

ALCOHOL AS A MEDICINE, Edited by Martha M. Allen, Superintendent of Non-Alcoholic Medication for the National Woman's Christian Temperance Union. Chas. C. Haskell & Son, Norwich, Conn., and London, Eng.

There is a large and constantly increasing class of people who do not believe that alcohol possesses the medical properties formerly ascribed to it, but who do not know how to defend their position, or what substitutes may be used successfully in its place. All such will accord a hearty welcome to this work of Mrs. Allen's. Practically all the material included in the book is new, and forms a valuable compilation of testimony from the successful practice of a large number of physicians.

A short study is made of temperance hospitals and their methods of treatment; and comparative death rates with and without the use of alcohol are recorded. On the principle that prevention is better than cure, excellent directions for bathing, exercise and diet are interspersed

throughout the book, and in cases where home remedies are needed at short notice, substitutes are suggested for Jamaica ginger, brandy and other alcoholic drugs which have hitherto been used in many families through ignorance of their true nature and from want of something better.

TELLTALES

"Pussy Willow had a secret that the snowdrop whispered her,
And she purred it to the south wind while it stroked her velvet fur;
And the south wind hummed it softly to the busy honey bees,
And they buzzed it to the blossoms on the scarlet maple trees,
And these dropped it to the wood brooks brimming full of melted snow,
And the brooks told Robin Redbreast as they chatted to and fro;
Little Robin could not keep it so he sang it loud and clear
To the sleepy fields and meadows: 'Wake up! Cheer up! spring is here!'"

FEAR, ANXIETY AND GRIEF IN CHILDHOOD

Health in maturity is largely dependent upon proper care in childhood. The physician and the medicine chest represent one side of the care of a child; an even more important phase is the supervision of mental development. Fear is the most distressing element of childhood; fear of the dark, imaginary illusions, fear of animals and calamities, terrors engendered by alarming tales and superstitions. These, improperly controlled, do more toward wrecking the nervous constitution of the child, impairing the disposition and even the character, than anything else. Anxiety, as manifested in self consciousness, is another harmful agent. Mrs. Theodore W. Birney, in a paper in the *Delineator* for March, gives some eminently practical suggestions as to how to control these mental phenomena. The article should be of great interest to parents and teachers.

PHYSIOLOGY TOPICS FOR MARCH

PRIMARY—Needs of the Body Internally: Food, Drink. Why Not Alcoholic Drinks and Cigarettes? The Skin and the Sense of Touch. The Brain and Nerves.

INTERMEDIATE—Alcoholic Drinks. Tobacco. The Special Senses. The Sympathetic System.

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Continued from page 109

"Men who never use alcohol bear exposure to cold much better, and do their work more easily than those who take it." 3

These are but few of many illustrations which could be cited to show that even the earliest books emphasized the importance and advantage of building up a sound healthy body. But this very end can not be secured without also pointing out the consequences of disobedience to the laws of health, and this Mr. Ferguson himself elsewhere admits.

THE DESTRUCTIVE WORK OF CRITICS

If he and other critics had in the past devoted a tithe of the time they have spent in criticizing other people's efforts, to thinking out and formulating courses of study and other helps for the use of teachers in presenting this subject to their pupils, far greater good might have been accomplished than is even now the case. Fortunately, there are still people who realize that there is abundant room for constructive work under present conditions, instead of trying to tear down all that has thus far been accomplished.

3 Essentials of Health

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Anatomy, Physiology and Hygiene For High Schools. By Henry F. Hewes, M. D., Instructor in Physiological and Clinical Chemistry, Harvard University Medical School.

Price, \$1.00

With experimental work this book gives a connected outline of the processes which accomplish the maintenance of life in the body and of the rules of hygiene which it is necessary to follow in order to facilitate their harmonious action. Chapters are included upon the nature and action of bacteria in connection with infectious diseases, and also upon physical culture and gymnasium exercises.

Elementary Anatomy, Physiology and Hygiene For Higher Grammar Grades. By Winfield S. Hall, Ph.D., M.D., Professor of Physiology, Northwestern University Medical School.

Price, 75 cents

Treated according to the inductive method, beginning with the easily observed facts of plant physiology and leading by comparison up to human physiology and hygiene. Simple illustrations and experiments, but no dissections, are presented in connection with the physiological facts. A particular feature of the book is the lessons on domestic economy which form a noteworthy contribution to one of the most important problems of sociology.

Intermediate Physiology and Hygiene For Fifth and Sixth Year Pupils, or corresponding classes in ungraded schools. By Winfield S. Hall, Ph.D., M. D., and Jeannette Winter Hall, Special Teacher of Physiology, Berwyn, Ill.

Price, 40 cents

The illustrations are a marked feature of this book, including both mechanical diagrams and attractive pictures designed to interest the pupil. Special attention is called to the simple comparisons of the bodies of human beings and of the lower animals. The object of this comparative study is to impress upon the mind of the pupil the unity of nature and to cultivate in him a love and sympathy for the lower animals.

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CONTENTS

	PAGE
The Relation of Scientific Temperance to Popular Needs	113
Primary Lessons—Second Year—The Parts of the Body	116
Editorials	119
Grammar Lesson—Fourth Year—Cleanliness	120
The Next Step in Human Progress	122
High School Lesson—Assimilation	124
Food and Poison	126
A Plea for the Birds	127
Book Reviews	128
Physiology Topics for April	128

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MARY H. HUNT, EDITOR

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APRIL, 1903

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School Physiology Journal

Vol. XII

BOSTON, APRIL, 1903

No. 8

APRIL MAGIC

BY FRANK DEMPSTER SHERMAN

FLUTE-like across the morning mist
A lyric note comes quavering
From April's young ventriloquist
To welcome spring.

Look where you will you may not see
This small magician as he weaves
Spells of sweet music while the tree
Dreams of green leaves.

Now here, now there, now gone, alas !
But just as you would call him cheat,
You glimpse the first brave blade of grass
Close at your feet.

And when the gray yields to the blue,
And tempts once more his cadence clear,
Behold a crocus ! —token true
That spring is here.

THE RELATION OF SCIENTIFIC TEMPERANCE TO POPULAR NEEDS

BY MARY H. HUNT

UNDER this heading attention was called last month to the debt which the world owes to science for investigating and publishing the real nature and baleful effects of alcoholic beverages. I also discussed many of the fallacies leading directly to the drink evil which it has been my lot to encounter in nearly every state in the Union. Still others are set forth in the present article, showing misconceptions which yet exist and need to be removed.

THE FALLACY THAT ALCOHOL SHARPENS THE WITS

I was to address the legislature in one of the large states of the middle west. The legislator who had courteously arranged the hearing said, "You are to speak in the afternoon to a joint session of the two houses, the president of the senate presiding. Let me advise. Eat a light dinner, and just before you speak, drink a glass of wine. I should take a stiff brace of whisky, but wine will perhaps fit a lady better."

As I mentally recalled the part that whisky has played in the passage of bad laws, I pleaded before that legislature for an education that will teach all the people in childhood and youth the solemn facts of science that

Alcohol, by injuring the brain, impairs ability

to reason correctly, and hence impairs the judgment, weakens the will, and unfits the drinker for right action.

The schools for more than a decade have been so teaching, and now the glad news comes that, by actual count, nine-tenths of the men in the lower house of the legislature in a large western state are total abstainers.

THE FALLACY THAT ALCOHOL AIDS DIGESTION

In the early days of the great conflict for a good school literature on temperance physiology for the children of this country, a man in position to help or hinder said, when appealed to, "If you want total abstinence teaching in the proposed books, I am not with you. My digestion requires a little good whisky with my meals three times a day. My physician says so, and I take it." In reply, I read to him the testimony of science that

Alcohol in small doses impairs to a slight degree the action of the gastric juice; in large doses it destroys the solvent power altogether, etc. It makes the drinker feel better by numbing the nerves that should report the injury done.

THE FALLACY THAT ALCOHOL PREVENTS RESPIRATORY DISEASE

The notion that I found well nigh universal, that alcohol is both a preventive and a cure for colds or ills of the respiratory system, led to the entry in the notebook, the people must be taught that

Alcohol, instead of preventing and curing colds, predisposes the user to take cold, and creates an abnormal condition making a favorable soil for the germs that cause lung disease.

THE FALLACY THAT BEER AIDS GROWTH

I often met the notion represented by a German woman in southern Ohio, who said, "I want my boys to be tall, big men, so I give them beer."

As she talked, I took out my notebook, told her what it was, and that I was trying to find what must be taught the people to prevent the intemperance which she abhorred as much as I. At the same time, I told her that, in addition to the power which beer has of creating the alcoholic appetite that might destroy her sons, it could not help but would hinder their growth. Then we talked long about the statement from a medical journal which I had just read :

There is good authority for saying that alcohol prevents the proper nutrition and consequent growth of the bones.

Years after, she introduced her tall, broad-shouldered, total abstaining boys to me, with grateful reference to that conversation.

THE FALLACY THAT ONE CAN DRINK LIKE A GENTLEMAN

The Woman's Christian Temperance Union ladies met me at the station in a fine old town in an eastern state where I was to speak that evening. As soon as we were in the carriage that was taking me to the home of my hostess, one of them said, "You are to be entertained at Mrs. Judge Blank's, a beautiful home. The judge died two years ago of pneumonia. He always drank, but "like a gentleman," his wife says. The whole town loved the judge, he was so good to everybody; so it is a kind of general grief to have his youngest son, who is just the image of his father, sent home from college for drunkenness. We temperance women had a quiet meeting by ourselves to pray about it, and before we went home somebody suggested that we get you here to see if you could say something that might save him."

My soul quailed before the task they had set me as I thought of the awful power of alcohol, when through hereditary and acquired force it sets the tissues of the human being calling for the destroying poison.

The young man was even more prepossessing than I had anticipated from the description. He had a tall, fine figure, abundant dark brown, wavy hair thrown back from a broad forehead, dark blue eyes, a poetic type of face, and an air of goodfellowship that was very winning. "Worth saving," I said mentally.

"I am not strong enough to hear the subject discussed publicly," said his mother, quietly, as her excuse for not going with me to the lecture as the carriage came to take us to the church.

"He was not present," the ladies afterward said, in disappointment. But he was, he told me the next day, as he sought me out in the summerhouse on the bank of the river that ran past the large grounds. "I was there last night behind some of the fellows in the back seats," he said, "and I made up my mind that as you were to stay until the afternoon train, I'd talk this thing over with you, if you don't mind."

Then began the story I was prepared to hear, of never remembering the time when he did not like the taste of the wine in the pudding sauces, and when he did not want some when he saw it poured out at the table; of small indulgences that became more open as he came to the time of being his own master; of the

awful horror of mind when he realized that he had lost his self-control; of his love for good literature and learning, for he had a naturally fine mind; of his repeated resolve never to touch the "stuff," as he called it; and of the breaking of these resolutions as often as made.

"You hit my case only in part last night," he said, "when you quoted John B. Gough as saying, 'My father could be a moderate drinker, but I can be only a gutter drunkard or a total abstainer.' But the worst of it is, I can't be a total abstainer, and it is of no use for me to try to drink like a gentleman, as mother urges."

Perspiration stood in large drops on his face as he described what he called the hopeless struggle between appetite and ambition for his future, winding up with the despairing exclamation, "I've about come to the conclusion that it's no use trying, that I'm bound to go to the devil anyway."

As he talked, I mentally heard as an overtone, the "Whosoever's" of the Gospel, and was asking in my soul, "Can my faith grip for him and he for himself the promises for deliverance from the love of sin as well as the guilt of sin; not so much his own as that of those who should have given him at the start in life the normal, uncontaminated nature he had a right to?"

Then we talked of the physical hygienic laws he must obey to baffle his tempter, for we must do our part, and of the power of God to keep the trusting soul, as the final salvation in his case. We knelt, and with sobs and tears the young man pleaded to be cleansed and kept from the *love* of alcohol, as he gave his heart to Christ. There was the light of a new hope on his face when he bade me good bye.

I heard from him afterwards. He had a hard struggle, fell once, but when ten years after I heard he had died without having tasted liquor for five years, I thanked God that one more human soul had escaped the destroying power of alcohol and had entered into the promises of those who overcome.

When critics and even so-called friends have said to me, "You are too radical," I have remembered that young man who was the type of a great host. As he gave his heart to Christ, I too, kneeling beside him, made my surrender, or resurrender, of anything it might cost me, as I prayed for God's help to secure the education of every child in this country in the facts of science that teach that

Alcohol is never a food but always a poison.

A little has the power to create an uncontrollable appetite for more.

Children suffer from the consequences of the alcoholic and narcotic habits of parents.

Total abstinence is the only safety.

This teaching, we may justly hope, has helped in bringing about the result that must gladden the heart of every true American, namely, that the United States has the smallest per capita consumption of alcohol of all the great nations.

THE FALLACY THAT TEMPERANCE TEACHING IS NOT
NEEDED IN THE LOWER GRADES

The temperance education law of Pennsylvania was pending, in 1885. A tremendous effort was being made to have the bill amended to confine the study to the higher grades. I was canvassing the state against that proposition, and had pleaded as best I could with a large audience in the courthouse of a town in the central part of the state. Before I left the platform, a plain, poorly dressed woman came up and whispered in my ear, "I have walked three miles to hear you tonight. I read about it in the papers. My husband dri—." She hesitated to pronounce the word. It was not necessary. The quiver in her lip told the story of the iron that had entered into her soul.

"I've got three boys," she continued. They'll have to go to work before they get to the higher grades. I want them to learn not to drink. Don't you let them take the study out of the lower grades."

Then she added, "I washes to keep the boys in school, and here is something to pay your carfare to keep them from taking it away from the boys that have to go to work so early." As she dropped the silver into my hand her tears and mine fell upon the money, and I promised I would stand by her boys.

In the grand assize I expect to see those boys, and many like them from all over our country who had to "go to work so early," standing on the right side, because they learned in the lower grades to abhor the soul and body destroying alcohol and other narcotics.

Let no one say that I think scientific temperance education in the lower grades is all that is needed to secure entrance into heaven. What

I do believe is that such education will materially diminish the probability that those who receive it will hear the awful sentence, "No drunkard shall inherit the kingdom of heaven."

At the ports of entry to our country, I have seen hosts of people from all lands pouring out of the steerage of great transatlantic steamers, at the rate of half a million and more per year. These hosts represent old world drinking habits and consequences. All too soon they are to become a part of this government of the people. The sight of them intensified the conviction that in the lower grades of our public schools, where alone we can be sure of reaching the largest proportion of the children of these

people, the children must be taught all they can understand of the evil nature and effects of alcoholic drinks and other narcotics. The transforming power of this truth is the bulwark upon which we must depend to save us from this alcoholic invasion.

If we are to prevent intemperance by securing the highest physical and consequent mental and moral development of the people, the whole subject of hygiene suitable for public schools, in addition to anti alcohol instruction, must be taught, with anatomy and physiology enough to make such hygiene intelligible.

Such is the instruction that is now mandatory in the public schools of this entire country, and almost universally for the last ten or fifteen years. The effect of this may be noted in the increase of four and one-tenth years in the average length of life in the United States reported by the last census, and also in the following testimony of two eminent Philadelphia physicians, recently published in the *Journal of the American Medical Association*:

"A large share of the increased interest in health may be attributed to the systematic study of physiology and hygiene, including the scientific temperance instruction, which has for some years been a part of the regular course of study for all pupils in our public schools."



"The flowers appear on the earth;
The time of the singing of birds is come."



Primary Lessons

SECOND YEAR

PARTS OF THE BODY

WHENEVER a ship leaves harbor, a special pilot goes with her who is familiar with every shoal and rocky ledge. Half a point off the true course in some places means shipwreck, hence the pilot never relaxes his vigilance until the open waters of the ocean are reached.

The same unceasing watchfulness must surround the child from the moment he leaves the protecting influence of the home until his school days are ended and he enters business for himself. Half a point from health means arrest of normal growth, if not predisposition to actual disease. The slightest deviation from the path of honesty, truthfulness, total abstinence, or any other virtue implies corresponding weakening of the moral fiber.

As soon as the child becomes aware that he has a body, he is old enough to begin to know how to take care of it; and as soon as he knows right from wrong he should be taught to choose the one and refuse the other. Only thus can the true object of education be attained, and favorable conditions provided for developing the germs of physical, mental and moral excellence which lie dormant in every human being.

PLACE IN THE COURSE

The lessons which follow are based on the supposition that the children already know that the body consists of head, neck, trunk, and limbs, and in a general way why each is needed. In this grade, they are ready for more detailed knowledge of these parts of the body, and of ways in which they may care for them and promote their healthy growth.

(1)

HOW THE BODY IS MADE UP

To avoid any tendency toward self-consciousness on the part of the child, it may be wise to begin the lessons on this topic by calling attention to the parts of the body and their uses as

found in familiar birds and animals, and then leading up to the same parts in people; emphasizing in every case what the head or the arm does for its owner instead of the fact that the child or animal has these parts.

Have some live animal in the room to illustrate the first lesson talk on the parts of the body, also a picture of the same on the board, done in colored chalk. In the present case it is supposed that a pet bird in a cage has been loaned for this purpose.

LESSON TALK

We have a little visitor this morning. His name is Tito, and here is his picture. It looks just like him. It is the same size and color. Is it the same bird? Why not?

Bring out the fact that Tito is alive, while the blackboard bird is only a picture. Tell what it is to be alive.

What parts of his body can Tito move that the bird on the blackboard can not? How is Tito's head unlike that in the picture? How are his legs different? Tell something about the other parts of his body.

How are your heads like Tito's? How are they unlike his? In what ways are your arms different from his wings? How are your hands unlike his claws? Name something else alive that has a head; wings; legs; a tail.

If we were to let Tito out of his cage, and he wanted to go out doors, he could either hop or fly. How do we get from one place to another? What parts of our bodies do we use in moving about? What parts does Tito use?

Outline on the board an outstretched wing and claw, and directly underneath an arm and leg. Which of these drawings look like our limbs? Which like Tito's?

Point to the different parts of each. Give their names. Find the parts of the wing and arm that are most nearly alike. Find the corresponding parts of the claw and leg.

Touch the parts of your body that you can bend. How many such parts can you find? Give the name, joints, to these places if the children do not know it already. Point to the joints in the drawings on the board.

HOUSES TO LET

Every summer Edna and her mamma went into the country to live. This time they were going to move into a new house when they came back in the fall, so there was a To Let! sign in the front windows for days before they started.

When they reached the big country farm house, it was almost dark and Edna was tired and sleepy. She could hardly stay awake long enough to eat her supper.

But the next morning she was up with the chickens, and you know how early that is.

She ran out to the barn the moment she was dressed, and what do you think she found the very first thing? Some tiny chickens trying to get out of their eggshell homes.

The mother hen had grown tired of waiting for all her eggs to hatch, and had gone off with the rest of her brood to hunt for bugs. So these last little fellows had to shift for themselves.

Edna called her mamma to see the little new chicks.

"They have houses to let, just like us," said mamma when she saw the empty eggshells. "I don't know whether they will find anybody to move in or not, but at any rate they are trying to get out of them as fast as they can."

"See those cunning little ones with just their heads sticking out of the shells," said Edna. "They don't look as if they were really awake yet. Perhaps they don't know it is moving day."

"But I am sure that big fellow does. Doesn't he look glad to get out? He is spreading his wings and stretching up as tall as he can. I do believe he is trying to stand on tiptoe."

"Perhaps he thinks we want to take his picture," said mamma, "and he is posing for us."

"That's it!" laughed Edna. "He is showing off all he can. I can see every bit of him but one foot; his head, and bill, and eye, and wings, and back, and legs. Isn't he a beauty?"

"How much could he see of us if he were to turn around and look this way?" asked mamma.

"He could see our heads and hair and faces and eyes and nose and cheeks and mouth and chin and ears and neck and shoulders and arms and hands and fingers and bodies and legs and feet and—that's all, I guess."

"I am very sure he would not see as much as that," laughed mamma, "because he is only a chicken, and can not go to school as my little girl does. But I think he would see some nice

yellow meal if we had it, and come running up to get his breakfast. Let's get some and see."

THINGS TO REMEMBER

Live animals and people eat and breathe and grow and move about.

Their bodies are made up of parts fastened together.

These meeting places are called joints.

The joints can bend in different ways to move the body.

Birds have wings instead of arms.

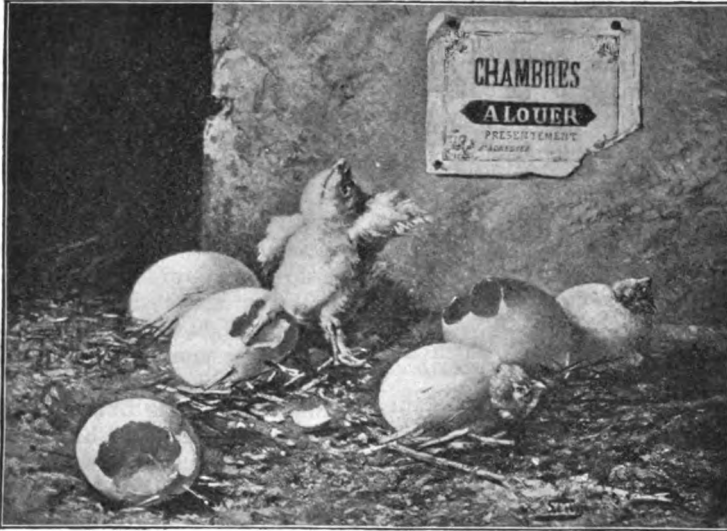
Animals have four legs instead of two arms and two legs.

(2)

THE USES OF EACH PART

In presenting a topic as comprehensive as

the uses of the parts of the body, it is as important for the primary teacher to know what to omit as what to choose. It is obvious that but few ideas at once can be presented to children of this grade, but these should be so developed as to stimulate their thinking powers and



"They have houses to let just like us."

lead them to fresh discoveries of their own.

Begin with things which the children know have been made or done by somebody, and show how each was accomplished. This will call attention in the natural way to the work of those parts of the body in which the child is most interested.

A bird's nest is an excellent illustration to begin with. If one is being built near the school house, the children can not watch the little workers day after day without learning to respect their faithfulness as well as to admire their skill. If no nest is going up near by, a last year's one will answer, and should be brought into class at the time of the

LESSON TALK

This was the home of a robin family. Do you suppose they found it ready made for

them, so that all they had to do was to move in? How did it come up in the maple tree where they lived all last summer?

Yes, they built it themselves. How did they do it? Tell what parts of their bodies they used. What have you seen a robin do with his bill? With his claws? With his wings?

We live in houses, too, do we not? Who builds them? What parts of the body does a carpenter use when he builds a house? In what other ways can he use his arms and hands? Tell some of the things you have done with yours today.

How did you get to school this morning? What else do we need feet and legs for besides walking? What games would you have to give up if you had no legs or feet?

Point to the part of your body that you use when you talk; when you listen; when you read; when you think. As I touch different parts of my body, tell what each is used for.

Sometimes we see a person who has lost an arm or a leg, and yet manages to get on pretty well. There are other parts of the body that every one must have to keep him alive? What are these parts?

POINTS TO REMEMBER

Every part of the body is needed, and has its own work to do.

The head and the trunk contain the parts that keep us alive.

The upper limbs are the parts with which we do most of our work.

The lower limbs carry us anywhere we want to go.

We can do many more things with our bodies than any bird or animal, but they can do some things that we can not.

(3)

THE CARE IT NEEDS

Intelligent use of any implement implies its proper care. If this is true of tools in general, it is infinitely more necessary in the case of the body, the one indispensable tool which is adapted to the performance of so many different kinds of work.

Call attention to matters of personal hygiene as often as occasion arises; the use of overshoes in wet weather, the removal of wraps in the house, avoidance of draughts, etc.; but set apart also definite times and seasons for emphasizing the care of the body. One such opportunity comes in connection with lessons like the foregoing, and necessary rules may be put into story form.

THE WAY TO GROW

Way up in the top of a tall tenement house

lived two little German girls, Elsa and Bettine Kratz, with their father and mother.

Elsa went to kindergarten every morning, and in the afternoon she and Bettine and mother had kindergarten at home.

"My little girls must use what brains they have," Mrs. Kratz used to say, "if they ever expect to have more." So Elsa read over at home everything she read at school, and pretty soon Bettine could read too.

Then they played all the kindergarten games, and mother told them new ones which she used to play when she was a girl, in her old home across the sea.

"A child that plays well will make a woman that works well," their mother told them. If you want to be as tall and strong as I am, you must give your arms and legs and bodies plenty of exercise."

"But we haven't nice green fields to play in, as you had in Germany," said Elsa.

"No, but you have the big flat roof with the awning that father put up to keep off the rain and hot sun, and the park is not far away."

"If we play all the time will we grow faster?" asked Bettine.

"No, indeed?" laughed mother. "That would wear your little bodies out faster than they could possibly grow. What else do I have you do every day?"

"We eat and wash dishes and tidy the room and run errands, and Elsa embroiders. I know how to embroider, too. Elsa shows me when we sit in the big chair, and some day I'm going to do some all myself," said Bettine, eagerly.

"I hope you will. Embroidery makes the hands skilful, but there are other parts to our bodies besides the hands, and each needs different sorts of work and play to make it strong and helpful."

"There is one other thing that is necessary, and that is plenty of sleep. You know now why I have you go to bed so early every night. You have been using different parts of your bodies all day, and when night comes these must have a chance to rest or they will not grow. Perhaps you will be more willing to go to bed now you know the reason."

POINTS TO REMEMBER

To have a well, strong body we must take good care of it.

Our bodies need food and work and play to make them grow.

We must take them out in the pure air every day where they can get plenty of sunshine.

They must have a long rest at night.

We must not hurt them by smoking cigarettes, or by any other bad habit.

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WHY HAVE TEXT-BOOKS

THERE is a certain phrase in the temperance education law of Massachusetts which is open to discussion and strained interpretation at the present time. The law of Massachusetts specifies that physiology and hygiene, including special reference to alcoholic drinks and other narcotics shall be taught "as a regular branch" to all pupils in all schools, but there seems to be some misapprehension in that state as to how regular branches are taught.

A little inquiry will show that the regular branches, such subjects as arithmetic, geography, reading, history, and grammar, are taught from three sources,—the teacher, experimental observation on the part of pupils, and text-book instruction. It is this last source of information which is here discussed, for certain persons at the present time are advocating the doing away with text-book instruction in temperance physiology.

Let us see whether they are justified in taking this position. Obviously, text-book teaching is impossible in primary grades, for pupils wrestling with the first principles of printed English are not able to derive benefit from books. But as soon as the child can read, that is, beginning with the fourth school year, he is given his arithmetic, reader, speller, and geography, and from that time the text-book is made as indispensable as the teacher. Eliminate the text-book element from the teaching of the regular branches, and the whole modern system of secondary education is crippled. The absurdity of eliminating text-books from geography or arithmetic is evident. It is just as destructive, or more so, to eliminate them from temperance physiology which the law also terms "a regular branch."

The teaching of temperance physiology is hedged about by difficulties met with in teaching no other school branch. Some parents of school children, being unacquainted with recent research in chemistry and medicine, still believe

or pretend to believe the old-fashioned and exploded doctrine of the virtues of alcohol. While many of them are open to conviction, others, through interest in the liquor traffic, are determined to throw every obstacle possible in the way of the new teaching that denies their beliefs or that they think will injure them financially. In coping with such persons, the teacher should be given every aid possible, and text-books are invaluable to her.

Again, the instruction being new, has not yet generally been reduced to pedagogic form, and so is harder to teach than a study containing sharp divisions in subject matter *per se*, or established through many years of teaching. The average teacher can follow with great success, as many are doing throughout the land, lessons from well graded text-books in which the subject has been reduced to pedagogic form and systematically divided into years and lessons by able educators of the day, provided such books are also in the hands of pupils who have them as one source of information in other subjects. Deprived of books, instead of securing the covering of the whole field by keeping pace with the progressive development of the child, the teacher who must plan her own course will necessarily repeat, wholly omit much important matter, and slight more, through lack of system.

Moreover, the average teacher has not the educational training to make it safe for her to develop and interpret temperance physiology according to her understanding. It is to be hoped that in the near future normal schools and colleges will adequately prepare all teachers in this branch, but they do not do so now. For these reasons, teachers generally have not the large and intelligent grasp of the whole subject to enable them, even with the aid of reference books, to give what should be given.

In summary, since the subject, by touching prejudice and the interests of the liquor traffic, encounters obstacles unmet in other branches; since it has not yet been generally reduced to pedagogic form except in the best text-books; and since teachers for the most part have not been trained expressly to teach it, books that are prepared by persons who are so trained should be used. Any regular branch to be well taught necessitates text-books; temperance physiology would be a farce without them.

The law has decreed that temperance physiology must be taught thoroughly as a regular branch, and it would be a willful and irreparable violation of the letter and spirit of the law to deprive pupils of text-books in this study, which is securing a temperate citizenship to control the future of Massachusetts.



Grammar Lessons

FOURTH
YEAR

TWO LESSONS ON CLEANLINESS

SEEING on a school blackboard the following topic for the next day's work in physiology,

WHY SHOULD WE BATHE

I asked if I might come in to hear the lesson.

A LESSON WITH BOOKS

The class came together the next morning with the eager look of children who have something to tell. The teacher began by saying,

"As Edward and some of the other boys were coming into school this morning, I saw drops of water on their faces. Edward, you may tell us if you boys had been washing your faces and had forgotten to wipe them."

"We had been running," Edward said, "and the water on our faces was sweat."

Teacher: "Do any of you know another name for sweat?"

Many hands went up, and the name perspiration was given.

Teacher: "How did the perspiration get on Edward's face? Where did it come from?"

"It comes from inside of us," was the best answer given, to which the teacher added the information, "It comes from the covering of our bodies. What is that?"

"The skin," was the reply.

Teacher: "Now I will tell you how the perspiration gets through the skin."

"It comes out through little holes that are in the skin all over our bodies. Look on your hands and see if you can find these holes."

"No," the teacher said, as no hands went up. "We can not find them without the microscope, they are so very small."

Turning to me the teacher said, "This is a fourth year class and I want them to learn to get information from their books." Then, addressing the class, she said,

"Please open your physiologies to page — , and find what these holes are called."

"Pores," was the quick answer, as the books were closed.

Teacher: "Is the perspiration running around loose in the skin, ready to come out of any opening it finds? Let us look in the book, page — , and see."

Hands soon went up, and the reply was given:

"The perspiration is in tubes that end in the pores, and it comes out when we get warm."

Teacher: "Will may come to the blackboard. Hold up your right hand. We all see that it is clean and dry. Now hold it, palm down, on this clean blackboard while the rest of the class look in their books for the answer to the question, What is in the perspiration besides water?"

They were soon ready with the answer,

"There are impurities in the perspiration."

Teacher: "How can impurities get into the perspiration?"

Not many hands went up, but one pupil who had read more carefully than the others ventured the reply, "From the blood."

Teacher: "That is right. But we learned the other day that the blood is in blood-vessels, which are tubes; and you have just said that the perspiration is in tubes. How can the impurities in the blood which is in one set of tubes get into the perspiration which is in another set of tubes?"

The class looked puzzled.

Teacher: "It could not be done if these tubes were hard like metal water-pipes, but they are so soft and thin that the impurities in the blood soak out through the thin walls of the blood-vessels, and into the perspiration tubes. Then they come out through the pores with the perspiration."

The teacher renewed and varied her questions until sure that the class understood. To deepen the impression, she showed a coil of white twine with very fine red silk twisted about it, and, using also a picture in a high school physiology of the sweat glands in the skin, she compared the twine to these glands or tubes, telling the class that as the red silk was wound around the twine so very fine blood-vessels are wound around the sweat glands. In this way the impurities can soak through the walls of the blood-vessels into the sweat-tubes and come up through the pores to the outside of the skin.

More questions followed until all could explain this process correctly.

Then, pointing to the moist impression of Will's hand on the board, she used this to illustrate the fact that small amounts of perspiration are all the time passing out of the pores of our bodies, taking with it impurities.

Teacher: "Now we are ready to ask what will happen if we do not wash off these impurities?"

Every hand went up, and the pupil called upon replied,

"If they are not washed off they will plug up the pores."

Teacher: "You are right, and if the pores are clogged so that the impurities which should pass off through the pores of the skin do not, what may happen?"

"It may make us sick."

Teacher: "Who is ready now to answer the question on the board, Why should we bathe?"

Out of all the replies, the best was written on the board:

"We should bathe to wash off the impurities and keep the pores of the skin open."

Then followed practical questions and answers about the best time and manner of bathing. A broad-browed, thoughtful boy said:

"Miss Ames, 'you told us, and the book says that food soaks through the walls of the blood-vessels giving each part of our bodies, the bones, the brain and muscles, and so on, just the kind of food each needs. Why doesn't the food soak into the sweat tubes and come out in the perspiration?"

For a moment the teacher looked puzzled, then said:

"There is a great deal more that you will be able to understand as you study about this subject in the higher grades, but no one can tell why the food that feeds the bones does not soak out on the muscles to feed them. What would happen if it did?"

"We could not play ball if it did, because our muscles would be stiff like bones."

"Yes, that is true. No one can tell why the food does not soak into the sweat glands. It is one of the wonderful things about our bodies that God has so made them that the right food goes to that part of the body which needs it."

The children agreed that it was wonderful, adding, "It's jolly to know as much as we can about it, anyway."

In one or two cases incorrect answers were given by the children. The teacher wrote the right statements on the blackboard without further comment than to say, "John has given one answer. I have written another on the blackboard. As you take your books to read over together the lesson, we must find out which is correct;" and the children showed the greatest eagerness and keen intelligence as they sought out the truth for themselves. They read aloud in turn the text relating to the subject which they had been discussing, thus, as their answers to the review questions showed, fixing in their minds the facts which they had learned from the teacher and observation.

THE SAME LESSON WITHOUT BOOKS

A few weeks later I happened to hear a lesson on the same subject in the same grade in another part of the country where there is just now a most unintelligent opposition to books. The teacher began by asking the children what was the first thing they did on rising in the morning; naturally eliciting almost every possible answer except the right one.

At last she told them that they should take a bath. No physiological reasons were given for bathing. The children

were told that they should take a hot bath at least once a week and a cold bath every day, but the only statement that approached a reason was that the master of the school and all the teachers took daily baths. The pupils had no books as a guide, and were thus turned off with only the dogmatic statement of an unprepared teacher. Result, no logical reason lodged in the intelligence of the pupils for the truth she wished to teach.

In the first case, the pupils had the three sources of information which the school offers the child, the *teacher*, the *book*, and *observation*, and from these three sources they had learned the physiological reasons for an important act of personal hygiene.



"Beautiful hands are those that do
Work that is earnest, brave and true.
Moment by moment the whole day through."

THE NEXT STEP IN HUMAN PROGRESS

BY MARY H. HUNT

THE March number of the *Century* contains three articles which show that the great ethnic changes now going on in this country are challenging attention. According to the census of 1890, the descendants of our English ancestors are still in the majority in the United States. But that majority is being rapidly diminished by the half a million people per year from other countries in the old world who are passing through the gateways of this nation to become American citizens. In commenting on this fact, one of the *Century* writers, Gustave Michaud, says, "What the newcomers are, is in a large measure what the nation will be."

Professor Giddings throws light on this prospect by reminding us that our English ancestors were the product of the admixture of the same three great racial types that are now coming to our shores, the achieving Baltic, the conservative, philosophical Alpine, and the artistic, leisure loving Mediterranean or romance races. From that point of view, there is certainly reason to hope that the blending, amid the boundless resources of this new world, of the English, Teuton, Celt, Latin and even the Slav may result, as intimated by Bayard Taylor in his Centennial Ode, in "a people stronger and yet more sensitive, nobler and yet more impressionable" than any whose story is told on the pages of history. It will depend on the development here of the highest possibilities of these invading multitudes. To them "America spells opportunity," says Jacob A. Riis, another of the *Century* writers referred to, and we have, he says, in "the schoolhouse, clean and bright as the flag that floats over it, the making of the tomorrow" which these people are bringing to us.

Dr. Frölich, of the University of Vienna, Austria, recently said to the writer:

"Three curses, militarism, ecclesiasticism, and alcoholism, are weighing down southern Europe from which you now are getting your largest immigration. If these immigrants bring you the blight of alcoholism for the civil and religious liberty you give them, it will be a disastrous exchange for you."

When he was shown the temperance education map of the United States, all white, with every black patch removed because no state is now without a temperance education law, and the pen with which the governor of Georgia signed the last law requiring the public school children of this land, home and foreign born, to be taught with other laws of health the physiological reasons for total abstinence from alcoholic drinks and other narcotics, he exclaimed, "Most wise! most wise! That will save you."

Contemporaneous with this invasion from the lands of the vine has been the enactment of these laws which require the children of the new-comers as well as our own to learn in our public schools the perilous character and effects of alcohol. Is not this one of the many providences which have furnished the succor for the times of special need that may be noted in our national history?

Alcohol destroys capacity for self-government which is the corner stone of our free institutions. Do the men and women engaged in public school education in this country realize that the lofty mission thus committed to them in this matter is nothing less than the perpetuity of this government by the people?

Dr. Harris, United States Commissioner of Education, attributes the disparagements of this study found in the reports of some school superintendents to the fact that they have not yet reduced it to what he terms "pedagogical form." Such form in the case of the study of other regular branches has been the result of centuries of study and educational planning. In the latest manuals of instruction in physiology this subject has been so graded. Although the first temperance education law was enacted twenty years ago, the study is yet so comparatively new that there is still in some quarters lack of comprehension of the fact that it is a science, with a body of truth to be taught that must be adapted to the progressing capacities of pupils from year to year, as are the facts of such studies as arithmetic, geography, history, and grammar. The object of this study, as already implied, is to teach, as a progressive branch to all future Americans, the physiological reasons for right physical habits, including especially those relating to alcoholic drinks and other narcotics, and to do so as these habits are being formed, new ones each year of the child's life, that thus he may be intelligently guided to the best physical and consequent best mental and moral life.

Ability to make out a course of study that will secure this object or to recognize such a course when properly made out implies:

1. Knowledge of the subject of anatomy and physiology.
2. Knowledge of the laws of health, or general hygiene.
3. Knowledge of the nature of alcoholic drinks and other narcotics, and of their harmful effect upon the various organs of the body and mind and therefore upon character.
4. The pedagogic sense that will select the simplest truths for the youngest classes, and so progressively develop the subject that new and interesting matter will be added each year from

grade to grade until the subject is covered, as it can be with a minimum of thirty or forty lessons per year from the first primary through the five grammar years and the first year in the high school.

5. The pedagogic sense that will recognize that in this as in every other study the school furnishes to the child three sources of information—the *teacher*, the *book*, and *observation* including experimental work. Where any one of these sources is withheld, as the child progresses far enough to profit by it, there is a loss in results.

6. The pedagogic sense that takes into account the statistics of school attendance which show that a very large proportion of pupils attend school only about five years of two hundred days each (see Report of Commissioner of Education). To postpone this study until the sixth year, or later, is to withhold from large numbers, and those most needing it, especially the foreign born, even in states having the highest school attendance, knowledge of the physiological reasons for the laws of health and total abstinence.

Lastly. To make out a course of study in this subject, a conscience is needed that can appreciate and respond to the obligation to provide the utmost warning instruction that will guide all the children safely past the pitfalls which beset their paths, and a patriotism that will gladly prosecute the work committed by the nation to the teachers of its children, that of saving, through education, the republic from corruption by alcoholic, narcotic, and other unhygienic habits.

As Dr. Harris implies, pedagogical criticism of the study reveals the pedagogical lack of the critic. The schoolman who says this study for all pupils is "an unnecessary repetition of the same matter year after year" has not, in the selection of topics and manuals of instruction, graded the subject to the progressive capacities of the pupils, taking care that new and important matter which the pupil can comprehend is added each year. Let him do that and the trouble he complains of will vanish. The doubter needs to read further who thinks the indorsed school physiologies are not teaching the truth about alcohol and other narcotics.

The critic who would have this study put into the higher at the expense of the lower grades should study the statistics of school attendance which show how many of the pupils, especially those who most need it, would thereby lose this instruction. Is it "an unimportant matter of mere pedagogics" whether fourth year pupils who have books in other subjects shall have them in this? If they do not, the school will

never furnish the foreign born future American, who seldom goes to school beyond the fourth year, the written page as one source of information regarding that sobriety which is essential to his becoming a good citizen.

Every step of progress in human liberty in our land has been not for ourselves alone but for the world as well. If we ask, at what cost? we find the answer in the story of the bleeding feet of our soldiers at Valley Forge, and told again in the graves in every cemetery over which are floating the weather-stained flags that on Memorial Days we change for fresh ones to mark the last resting places of those who gave their lives for liberty on this western hemisphere. At an untold cost of blood and treasure, religious and civil liberty has become our heritage that, like the beacon in our greatest harbor, is beckoning the world to our gates. For these new-comers, as for us, the next step in human progress is liberty from alcohol slavery.

Some one has said "The age of the saber is finished and that of the thinker has come," and that progress henceforth is not to be a blood-stained pathway. It will not be, my countrymen and women engaged in public education, if you, recognizing the supreme demand of our times, rise to meet it with the thoughtful study and wise teachings that are both your legal and moral obligation.

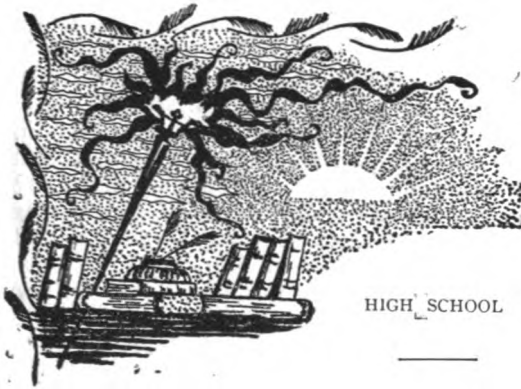
The fact that the United States has the smallest per capita consumption of alcohol of any of the great nations; that the better knowledge of hygiene which you have been teaching is one cause of the increase of four and one-tenth years in length of life reported by the last census; that the children have carried home from school the story that alcohol injures working ability until abstinence is largely required of employes by the business of the country; and that where the study is pursued as herein outlined, cigarette smoking is decreasing,—all show how large is the debt this country already owes to its teachers.

The countless heroes of the past, pointing to the priceless sacrifice through which liberty has thus far come, the present with its perils, the future with its hopes, all appeal to you to be increasingly loyal to your magnificent opportunities to train the great army of future Americans to a sobriety that will dethrone alcohol.

EASTER AWAKENING

BY MARGARET SANGSTER

Never yet was a springtime,
Late though lingered the snow,
That the sap stirred not at the whisper
Of the south winds sweet and low;
Never yet was a springtime
When the buds forgot to blow.



ASSIMILATION

TRAVELERS who have visited Oberammergau tell us that in one of the art stores there is a wonderful series of pictures of the German peasant Meyer who for thirty years took the part of the Christ in the great Passion Play.

Those taken when he first assumed the role show merely a rough, rude fellow, but as time goes on, and he is imbued with the character he has been chosen to represent, his coarse features soften and become spiritualized until no one would imagine him to be the same man. He has grown into the likeness of him whom he has portrayed so long.

In lesser degree, perhaps, but no less surely, every human being is acted upon and transformed by the thoughts he entertains, the habits he indulges in, even the air he breathes and the food he eats. He is defiled or ennobled by whatever he takes into his life and makes a part of himself.

The same law obtains in the making of the physical nature. The youth who means to have a strong, capable body must see to it that he uses only the best materials. No one knows how the different tissues select the particular nourishment that each requires, or the process by which the food becomes living tissue, and such knowledge is not essential to health. What is necessary is to supply the right conditions. Nature can be trusted to do her part.

THE ORGANS INVOLVED

Unless study of assimilation follows directly upon that of circulation, the latter should be thoroughly reviewed before considering the further changes by which food, after getting to the blood, is absorbed into the body.

Have drawings put on the board showing a section of tissue permeated with capillaries. From these explain how food and oxygen pass through the walls of the capillaries into the surrounding lymph which takes them to the

tissue cells. Review the lymphatic circulation in this connection, finding how the excess of lymph thus formed is removed, and what becomes of it.

Ascertain the structure of the capillaries and lymphatics, and find how each is adapted to its work. What is lymph? What purpose does it serve in the body?

Since the blood is continually bringing food and oxygen to the tissues there would soon be an overplus of material unless some outlet for its removal were provided. What is this outlet? How does waste matter get from the tissues into the blood? What becomes of it? How is the waste matter picked up by the lymph and disposed of?

SELECTION OF MATERIAL

Make with the class as careful a study of the composition of important body tissues as possible. Then make a similar study of common foods, finding which contain materials needed by the bones; by the muscles; the brain; the nerves; and other tissues of the body. What other purpose must food serve in the body, besides repairing and building up tissue?

Call for lists of foods suitable to be eaten together, and others which should not be taken at the same time, with reasons in each case. Select menus from the daily papers or other sources, and let the class decide whether each fulfils the proper conditions of a healthful diet.

Alcoholic drinks should be studied in this connection. Find the composition of alcohol which is the dangerous ingredient in each. Is it oxidized or broken up into other substances in the body as food is? How does it differ from a food?

Beginning with the digestive system itself, find how alcohol affects each of the important tissues of the body. Condense the most important of these effects into short sentences for the blackboard and opposite the long list thus obtained write the possible advantage, that of providing energy for heat or work. Compare this to the use of gunpowder for heating. Both will burn. Why then are they not wise fuel?

From the action of tobacco on the different tissues of the body show why it, too, should not be included in one's diet.

AUTHORITATIVE QUOTATIONS

INJURIOUS EFFECT OF ALCOHOL ON ALBUMEN

Alcohol does not remain in the stomach; it traverses the mucous membrane as the walls of a porous vase, and thus reaches the blood. It is here above all, that its injurious action appears in all its horror. The liquid serves as

a vehicle to the albumen which ought to nourish all the viscera, and which is dissolved by the process of digestion. Alcohol diminishes its solubility, and thus renders it unfit properly to fulfil its function. Drink, taken even in small quantities, leads rapidly to a peculiar bodily fatigue, similar to that produced by inanition.—DR. BIENFAIT of Liege.

ALCOHOL RETARDS DIGESTIVE FERMENTATION

It is claimed that alcohol aids digestion. On the contrary it coagulates albuminous matter and thus renders it more difficult of absorption. By its action the sugary materials become with difficulty soluble. It retards or embarrasses digestive fermentation. It provokes nausea, indigestion, and causes the gastric catarrh that troubles all drinkers.—DR. DE VAUCLEROY, Professor of Hygiene in the Belgium Military School.

DANGER FROM WOUNDS IN DRINKERS

In the drinker all wounds are dangerous. His blood is vitiated and the reactive power wanting. Hemorrhages are frequent and complication inevitable.—C. R. DRYSDALE, Consulting Physician to Metropolitan Hospital, London.

HARMFUL ACTION OF ALCOHOL ON THE BLOOD

Alcohol in the blood diminishes the oxygen-carrying property, destroying the hemoglobin. The waste products are retained and become sources for the growth of pathogenic germs. Both the liver and kidneys are subjected to increased activity with diminished nutrition.—T. D. CROTHERS, M. D., Hartford, Conn.

DEGENERATION OF TISSUE DUE TO ALCOHOL

Degeneration of the heart muscle and of



"Each day a chance may come to fight heroic battle for the right;
And so you may become, I deem, the hero of your own brave dream."

DECAY OF TEETH DUE TO ALCOHOL

When the stomach is disordered by alcohol, the pulp, or what is commonly known as the nerves of the teeth, becomes congested and liable to inflammation. This, being aggravated by the irritated and unhealthy state of the mouth, soon culminates in disease and death of the pulp. The teeth being robbed of that which supplies their nourishment and vitality, decay with great rapidity.—DR. McEHWNEY.

DELETERIOUS ACTION OF ALCOHOL ON THE LIVER

The extensive anatomical changes wrought in the liver by chronic alcoholism must necessarily interfere with its activity in producing bile, and must impair its glycogenic function and its power to destroy ptomaines.—J. W. GROSVENOR, M. D., Buffalo, N. Y.

the arteries is commonly seen in alcoholics; this means that there is a failure in the proper supply of blood and in its adequate removal. The tissues suffer from anæmia or congestion.—DR. E. CLAUDE TAYLOR, M. R. C. S., England.

INTERFERENCE OF TOBACCO WITH GROWTH

Children who use tobacco before reaching maturity have their growth interrupted, as nothing more definitely interferes with the equilibrium of tissue-building, digestion, assimilation, elimination, metabolism, than tobacco, and for these reasons its use favors gouty diseases, atheromatous degeneration, premature senility and decay.—I. N. LOVE, M. D., Professor of Diseases of Children, Clinical Medicine and Hygiene, Marion-Sims College of Medicine, St. Louis, Mo.

FOOD AND POISON

BY MAX KASSOWITZ

Professor of Physiology, University of Vienna

Read before a Society of German Physicians, Carlsbad, September, 1902. Published in the *Internationale Monatsschrift*, November, 1902.

"SINCE food serves as heat material for the processes which go on in the body, upon the principle of transformation of energy, the theoretical deduction was made by an investigator named Mayer that alcohol must serve the function of a food since it burns in animal or human bodies. This deduction is not true unless foods *simply* burn in the body, and that they do has never been demonstrated. On the contrary, we know that food besides burning in the body serves also, at least in part, to build it up, and there is nothing to warrant our asserting that any food burns in the body without first having been used to build it up, that is, without having contributed to make protoplasm. The question now to be answered is whether the immediate destruction, direct burning, is possible before it has served to build up living, assimilative protoplasm. That alcohol is a narcotic poison and can destroy living protoplasm is an acknowledged fact. In the view, dogmatically believed since the time of R. Mayer's experiments, that alcohol, which is a poison, is at the same time a food, we see a paradox which no one would think of asserting about any other poison. No true food destroys protoplasm as experiment will show.

"Chauveau tried recently certain experiments with a dog. He fed the dog on a specified diet and recorded how much work he could do every day. He found that during the experiment the dog gained in weight. Then the food of the dog was so altered that, while all else remained unchanged, a certain amount of carbohydrate [starchy food] was replaced by alcohol which was equal to the starch omitted, upon the hypothesis that direct burning of food is possible in the body without a previous building up of tissue. If, then, the alcohol had been true food there would have been no change noted. However, the dog not only accomplished less in the time during which he was fed alcohol, which is to be accounted for by the narcotic effect of the alcohol, but he also grew thin. Yet with less work accomplished and equal nourishment he would of necessity have increased in weight. The experiment shows, therefore, that alcohol as poison can not feed the body, but only injure it. Knowing this, we ought to desist from attempting to strengthen the weak and sick with alcohol, and from spending for alcohol in hospitals large sums of money which could better be devoted to real improvement of the condition of the food.

"Science can go astray; and the proclamation that alcohol is food and a source of strength has been an error involving heavy consequences. But science itself in its progress will correct its errors, including the error in regard to alcohol."

In the discussion following the reading of this paper, Prof. Hueppe of Prague said that no such fundamental contrast exists, i. e., between a food and a poison, since the most important foods taken, in unsuitable form, are severe poisons; here belong peptones and fatty acids which nevertheless every one takes plenty of, daily. Theoretically it is true that the body can manage small quantities of alcohol as it can of peptone; practically, however, although it can in a measure take care of poison, it is not proper to make too much of a claim out for alcohol on that account, since the danger lies in not keeping within bounds and thereby allowing the poisonous action of alcohol to gain the front. The speaker said that he had noted that both he, himself, and other people can do more work when they abstain from alcohol.

Prof. Rosemann, of Greifswald, said that even though alcohol must be given a food function theoretically, practically it is no food, since, in the necessary quantities to make its food value appreciable, it acts primarily as a poison.

Dr. Lenzman, of Duisberg, said that there is a difference between materials like peptone and alcohol which ought to be explained. The body makes of peptone a substance which serves to build it up, but it makes no such of alcohol. Small quantities of alcohol injure undoubtedly, for example, not the coarser liver cells, but, in a very marked way, the most finely organized nerve cells of the brain.

Professor Kassowitz came back in his conclusion to the fundamental difference between peptone and alcohol. Peptone is changed during the absorption in the digestive organs, in the blood there is no peptone; but alcohol is absorbed unchanged and so is in the blood as poison. His belief that nothing can be at the same time food and poison could not be overthrown by empirical statement.

EASTER PROMISES

BY CHARLES EUGENE BANKS

"There is no death," the flowers say,
 "In faith, we hide our souls away,
 While tempests desolate the earth,
 And patient wait the promised birth."

The south wind chants, "There is no death
 I come and winter is a breath;
 Against his falling walls I set
 The snowdrop and the violet."

A PLEA FOR THE BIRDS

BY HON. GEORGE F. HOAR

To the Great and General Court of the Commonwealth of Massachusetts :

WE, the songbirds of Massachusetts and their playfellows, make this our humble petition. We know more about you than you think we do. We know how good you are. We have hopped around the roofs and looked in at the windows of the houses you have built for poor and sick and hungry people, and lame and deaf and blind children. We have built our nests in the trees and sung many a song as we flew about the gardens and parks you have made so beautiful for your own children, especially your poor children to play in.

Every year we fly a great way over the country, keeping all the time where the sun is bright

bird were not in the sky, alive, but in a shop window or under a glass case. If this goes on much longer all your song birds will be gone. Already, we are told, in some other countries that used to be full of birds, they are almost gone. Even the nightingales are being all killed in Italy.

Now we humbly pray that you will stop all this, and will save us from this sad fate. You have already made a law that no one shall kill a harmless song bird or destroy our nests and our eggs. Will you please to make another that no one shall wear our feathers, so that no one will kill us to get them. We are told that it is as easy for you to do it as for Blackbirds to whistle.

If you will, we know how to pay you a hundred times over. We will teach your children to keep themselves clean and neat. We will show them how to live together in peace and



"They'll come again to the apple-tree, Robins and all the rest;
And the prettiest thing in the world will be the building of the nest."

and warm ; and we know that whenever you do anything, other people all over this great land between the seas and the great lakes find it out, and pretty soon will try to do the same thing. We know ; we know. We are Americans just as you are. Some of us, like some of you, came from across the great sea ; but most of the birds like us have lived here a long while ; and birds like us welcomed your fathers when they came here many years ago. Our fathers and mothers have always done their best to please your fathers and mothers.

Now we have a sad story to tell you. Thoughtless or bad people are trying to destroy us. They kill us because our feathers are beautiful. Even pretty and sweet girls, who we should think would be our best friends, kill our brothers and children so that they may wear their pretty plumage on their hats. Sometimes people hunt and kill us from mere wantonness. Cruel boys destroy our nests and steal our eggs and our young ones. People with guns and snares lie in wait to kill us, as if the place for a

love and to agree as we do in our nests. We will build pretty houses which you will like to see. We will play about your gardens and flower beds,—ourselves like flowers on wings,—without any cost to you. We will destroy the wicked insects and worms that spoil your cherries and currants and plums and apples and roses. We will give you our best songs, and make the spring more beautiful and the summer sweeter to you.

Every June morning when you go out into the field, Oriole and Blackbird and Bobolink will fly after you and make the day more delightful to you ; and when you go home tired at sundown, Vesper Sparrow will tell how grateful we are. When you sit down on your porch after dark, Fife Bird and Hermit Thrush and Wood Thrush will sing to you ; and even Whip-poor-will will cheer up a little. We know where we are safe. In a little while all the birds will come to live in Massachusetts again, and everybody who loves music will like to make a summer home with you.

RESOLUTIONS

ADOPTED AT A MEETING OF THE AMERICAN ASSOCIATION FOR THE STUDY OF INEBRIETY, HELD IN BOSTON, MASS., DECEMBER 18, 1902

Resolved, That it is the sense of this association that the indiscriminate sale and use of patent medicines and so-called "cures" for the alcohol and opium habits are not infrequently the cause of the formation as well as the continuance of these habits.

Therefore be it resolved, That this association memorialize the proper authorities not to issue any patent or proprietary right to any one desiring said patent or right for any remedy or medicine or "cure" or any compound whatever containing alcohol, opium, or other narcotic drug in which there is danger of habituation from its use.

Resolved, That all proprietary or patent medicines for which a patent is issued have a label on which are distinctly printed the ingredients of said preparation; said label being placed or affixed to the bottle, box, or wrapper in which said preparation is dispensed; and furthermore, that a heavy penalty or fine, or imprisonment, or both, be imposed upon any one who may manufacture, prepare, buy, or sell, or have for sale in stock, all such preparations not duly patented and labeled under conditions specified.

Resolved, That we reaffirm and indorse a resolution passed at a meeting of this society held March 23, 1893, in reference to the licensing and proper inspection of all institutions for the care and treatment of inebriates, morphia habitués, or other form of narcomania.

Resolved, That a copy of these resolutions be published in the medical and secular press.*

*These resolutions were read by Dr. Crothers, seconded by Dr. Rodbaugh, and unanimously carried by vote of the association.

BOOK NOTICES

PLANTS AND THEIR CHILDREN, By Mrs. William Starr Dana, Author of *How to Know the Wild Flowers*, Illustrated by Alice Josephine Smith. American Book Company, New York.

Mrs. Dana says in her preface that "A child's reading book should secure for the child three things,—practice in the art of reading, amusement and instruction." "Plants and Their Children" fulfils these conditions and more, for it furnishes all the guidance that a teacher of lower grades needs for her classes in nature study. The arrangement of the book is admirable. The opening lessons are upon the fruits and seeds of autumn, while succeeding lessons advance with the seasons through a winter study of "Schoolroom Garden" products to the

buds and flowers of spring. Mrs. Dana possesses the graceful faculty of being able to take the reader into her confidence in a way that delights the grown person as well as the child. As a reading book "Plants and Their Children" is well suited to intermediate grades.

SHORT STORIES OF OUR SHY NEIGHBORS, By Mrs. M. A. B. Kelly, Author of "A Volume of Poems," "Leaves from Nature's Story Book," etc. American Book Company.

This little supplementary reader contains between fifty and sixty lessons in Natural History told partly in prose and partly in verse. The stories are for the most part simple and interesting, though their value as natural history is slight. The book lacks a logical plan. The author treats of the frog, then the brown thrasher, next the "Vain Little Moth" and then the cray fish, without giving any clear impression of any one of these animals, or any reason for this peculiar sequence of subjects. Perhaps the book's faults are best summed up in the word "commonplace." The same material could be made into an equally interesting and far more instructive school book.

TEN COMMON TREES, By Susan Stokes, Department of Biology, High School, Salt Lake City. American Book Company.

With the good aim of giving children "a real acquaintance with common trees," the writer of this book shows in her first pages that she can not hold to the language adapted to little people; in fact her diction varies from the "once upon a time" type to such sentences as "The cherries are borne in umbels, or in racemes, that is, on an elongated axis." Such posers would phase the ordinary grown person who had not a botany at hand. Yet no attempt at explanation is made in this book for children.

The chapters on the oak and the evergreens are good, and the introduction of traditions adds interest. The book contains inaccuracies which children would be the first to detect; for instance the statement that "the flowers of the pear tree are without scent." The book as it stands must be taken with a pinch of salt and is therefore unfit to be placed in the hands of young children without revision.

PHYSIOLOGY TOPICS FOR APRIL

PRIMARY—Care of the Body. Cleanliness. The Body as a Whole; its Parts and Uses. Special Senses.

INTERMEDIATE—The Skin and Cleanliness. Heart and Blood. Tobacco. Bones.

ADVANCED—Assimilation. Organs of Respiration. Fermentation.

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Anatomy, Physiology and Hygiene For High Schools. By Henry F. Hewes, M. D., Instructor in Physiological and Clinical Chemistry, Harvard University Medical School. Price, \$1.00

With experimental work this book gives a connected outline of the processes which accomplish the maintenance of life in the body and of the rules of hygiene which it is necessary to follow in order to facilitate their harmonious action. Chapters are included upon the nature and action of bacteria in connection with infectious diseases, and also upon physical culture and gymnasium exercises.

Elementary Anatomy, Physiology and Hygiene For Higher Grammar Grades. By Winfield S. Hall, Ph.D., M.D., Professor of Physiology, Northwestern University Medical School. Price, 75 cents

Treated according to the inductive method, beginning with the easily observed facts of plant physiology and leading by comparison up to human physiology and hygiene. Simple illustrations and experiments, but no dissections, are presented in connection with the physiological facts. A particular feature of the book is the lessons on domestic economy which form a noteworthy contribution to one of the most important problems of sociology.

Intermediate Physiology and Hygiene For Fifth and Sixth Year Pupils, or corresponding classes in ungraded schools. By Winfield S. Hall, Ph.D., M. D., and Jeannette Winter Hall, Special Teacher of Physiology, Berwyn, Ill. Price, 40 cents

The illustrations are a marked feature of this book, including both mechanical diagrams and attractive pictures designed to interest the pupil. Special attention is called to the simple comparisons of the bodies of human beings and of the lower animals. The object of this comparative study is to impress upon the mind of the pupil the unity of nature and to cultivate in him a love and sympathy for the lower animals.

New Century Primer of Hygiene First Book for Pupils' Use. By Jeannette Winter Hall. Price, 30 cents

A simple and attractive presentation of the elementary facts of physiology for pupils of the fourth year grade. The language used is free from technical terms and readily comprehended by the child, while familiar facts are used to emphasize the principles discussed. Brief object lessons in general physiology are given, together with a simple treatment of the most important laws of hygiene. Contains numerous illustrations and useful and practical suggestions.

Oral Lesson Book in Hygiene For Primary Teachers. By Henrietta Amelia Mirick, A. B., Assistant Editor School Physiology Journal. Price, \$1.00

A manual for the teacher, containing suggestive oral lessons on the most elementary facts of anatomy, physiology, and hygiene, for the first three years of school life. At the end of each lesson are brief memory points summarizing the most important features. Each day's work is thoroughly planned and made simple and interesting.

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PHYSIOLOGY CHARTS No. 8

THE CHILDREN OF TODAY WE SHALL HAVE SAVED THE NATIONS OF TOMORROW IF WE SAVE

CONTENTS

A Preventive of Alcoholism	129
Primary Lessons—Third Year—Cigarettes	134
Grammar Lessons—Seventh or Eighth Year—The Organs of Secretion	138
Editorials	141
High School Lesson—Organs of the Body	142
Anti-Alcoholism in France	143
The Bremen Congress	144
Mistaken Criticisms	144
Physiology Topics for May	144

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IMPORTANT BOOKS ON NATURE STUDY

NATURE STUDY AND LIFE

By Clifton F. Hodge, Assistant Professor of Physiology and Neurology in Clark University, Worcester, Mass. With an Introduction by Dr. G. Stanley Hall. 12 mo. Cloth. 514 pages. List price, \$1.50.

"Nature Study and Life" is intended to assist teachers in directing their pupils in nature-study work, and to be used by the children themselves as a reference book. It has twice formed the basis for nature study courses in the Clark University Summer School; it has further stood the more practical test of teachers' institutes in various states; and, finally, its most important suggestions have been tried thoroughly in the schoolroom.

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School Physiology Journal

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No. 9

A CLOVER MESSAGE

I KNOW a place where the sun is like gold,
And the cherry blooms burst with snow,
And down underneath is the loveliest nook,
Where the four leaf clovers grow.

One is for hope, and one is for faith,
And one is for love you know ;
And God put another one in for luck—
If you search, you will find where they grow.

But you must have hope, and you must have faith,
You must love and be strong—and so,
If you work, if you wait, you will find the place
Where the four-leaf clovers grow.

—Ella Higginson.

A PREVENTIVE OF ALCOHOLISM

SCIENTIFIC TEMPERANCE EDUCATION IN THE PUBLIC SCHOOLS*

SEVENTY-FIVE years ago, M. Guizot in the opening paragraphs of one of his great historical works said, "For my own part, I am convinced there is a general destiny of humanity, a transmission of the aggregate of civilization; that the nations hand down from age to age something which has never been lost, which must increase, form a larger and larger mass, and thus pass on to the end of time." If the student of civilization could say as much in the first quarter of the last century, still more may we of the twentieth century be sure that progress is written on the banners of the world, that the human family is keeping step with hope, that the star on the horizon is the morning, not the evening star.

Great were the gains for human progress during the last half of the nineteenth century. Not many miles from where we are now gathered, at The Hague, the claims and disputes of nations that once could have been settled only by brute force, with the clash of arms and the outpouring of human blood, can now be referred to a court of peace for adjudication. Thus

*An Address delivered before the Ninth International Anti-Alcohol Congress held in Bremen, Germany, April 14-19, 1903, by MRS. MARY H. HUNT, World and National Superintendent of the Department of Scientific Temperance Instruction of the Woman's Christian Temperance Union; Life Director National Educational Association; Member American Association for the Advancement of Science.

progress is being made against war, that grim monster that has cost some of us so much.

The horrors of famine are mitigated by the altruistic Christian helpfulness that modern intercommunication makes possible, by taking the plenty of one section to the famine-stricken on perhaps the other side of the globe. Every mail and every steamer from my country, and doubtless from yours, to Scandinavia and Finland is today carrying money and food to the hunger-smitten.

The discovery of the bacilli of disease points to the time when, even if we are not able to kill the microbe of pestilence without killing the patient, we may yet prevent it from making the acquaintance of its victims as of old. Thus, the three great scourges of the human race, war, famine, and pestilence, are now held in leash as compared with the past.

The air is still vibrant with the Czar's proclamation of religious liberty and other reforms for the people of Russia.

Human chattel slavery is abolished throughout Christendom.

THE NEXT STEP IN HUMAN PROGRESS

It is, therefore, in the order of human progress, while the councils of peace at The Hague are ready to prevent war, and modern intercommunication is relieving famine, and the disciples of the infinitely small are holding pestilence at bay, that we, representatives of many nations, from two hemispheres, should be assembled here to consider the possibility of the overthrow of the worst of all bondages that ever enthralled any portion of the human race,—the alcohol slavery. It is the worst because it becomes a willing bondage that enslaves the soul as well as the body of its victim, while it mortgages his children and children's children to the enslaver. It must be overthrown, if our race is to move on through generation after generation up the heights of its utmost possibilities. How it can be overthrown is the supreme question of the hour.

We are here to find, if possible, an answer to this question that can have worldwide application. It is significant that for such purpose we have met in Bremen, Germany, the very heart of Europe, the section which was the fatherland of the ancient Teutonic peoples who were the ancestors of so many of us in this presence,—the German, the Dutchman, the Dane, the Swiss, the Belgian, the Frenchman, the Briton and the American.

Historians tell us that those ancestors of ours were adventurous men, hard fighters and many of them heavy drinkers. Concerning that heavy drinking, we, their descendants, have made some progress, for we know today that alcohol is a destroyer. Thus, although we come from many lands whither we have dispersed since the days of our ancient sires, and speak different tongues, we are ready to strike hands against this common foe.

Captain Mahan, an American writer, says, "All history is the aggressive advance of the future upon the past, the field of collision being the present." This being true, coming generations with clear brains and untainted blood are aggressively advancing on the alcoholic past of our inheritance, and are demanding of us a wise selection of weapons for this "collision" and unfaltering loyalty in their use. What shall these weapons be? Neither the spears of our ancestors nor the Gatling guns of today can avail in this collision, which is primarily a battle against ideas inciting to the drink habit which enslaves the drinker. This collision is the clash of the new teaching of modern science, that alcohol is a poison ever at war with human well-being, against the old notion that alcohol is a good creature of God for human sustenance.

An English historian says, "The progress of mankind depends on the success with which the laws of phenomena are investigated, and on the extent to which a knowledge of these laws is diffused." Here we have the weapons for this warfare:

First, Scientific investigation as to the truth about the character of alcohol and its effects upon the human system.

Second, the widest diffusion of that truth.

The education through the schools of all the people in the plastic period of childhood, before appetite for alcohol is formed, in the physiological reasons for obedience to all the laws of health, especially those which teach total abstinence from alcoholic drinks and other narcotics, is the sane and sure method for the dethronement of alcohol. It is sane and sure, because history shows us that in the ultimate contest truth is the strongest of all forces. God has so made the human mind that it can not be forever inhospitable to truth which, sooner or later, overthrowing ancient error, sits enthroned in conscience, guiding human action.

Do you say this educational method is a shot at long range? We admit that time is an important factor in the problem, but the child is soon the man or woman. Do you know any short range method by which an evil like alcoholism, as old as time, can be overthrown?

I trust you will not consider it intrusive for a representative from one of the youngest of the

nations to ask your attention to the practical working of this educational method in the republic beyond the seas.

With the first settlers of our land came alcohol. The consequences of its use are the same in all lands. Thus the story of its evil is contemporaneous with our history.

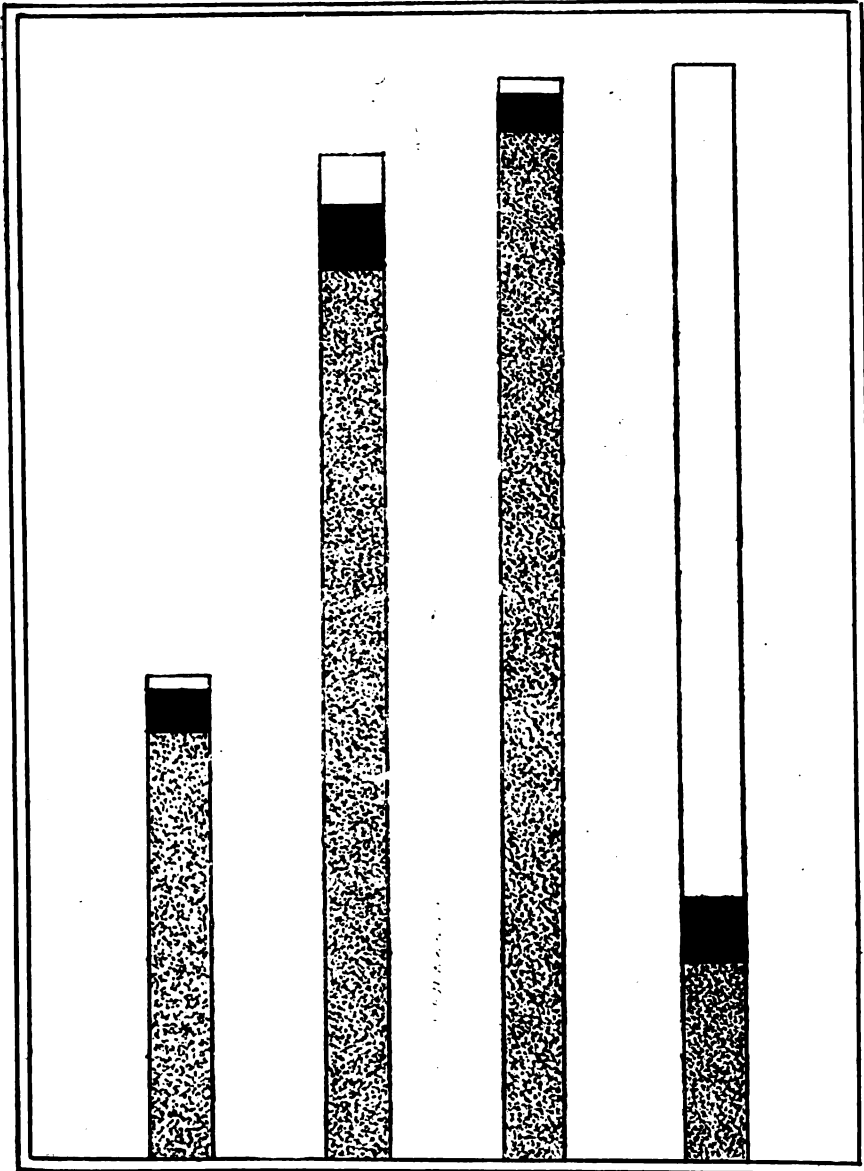
Some one has said, "When misery finds a voice, there is a beginning of better things." With the opening of the last century, the misery that always follows in the wake of alcohol found a voice in the awakened moral sense of the people of America. This took the usual form of first trying to prevent the evils of intemperance by substituting for distilled spirits the moderate use of light wine, cider, and later, beer. Trial of that experiment proved that wine and cider intemperance are as bad as any other, and that the brandy or whisky drunkard does not stay reformed if he continues the use of cider, beer, or wine. Thus, through disappointing experience, the temperance cause reached the total abstinence basis in the United States about the middle of the last century. Then followed thirty years of effort to check the evil through moral and legal suasion, each doing much good. This brings us up to 1880, when appeared a new agency for which all that had gone before had prepared the way. This new agency was the voice of science. We have quoted Buckle as saying that the progress of mankind depends on the success with which the laws of phenomena are investigated and the extent to which a knowledge of them is diffused.

AMERICA'S DEBT TO THE LABORATORIES OF EUROPE

Here let me pause to pay a just tribute. It was the success of the investigation of the laws of phenomena concerning alcohol, conducted in Europe, that made it possible for us to enact the educational statutes which have given wide diffusion to the truth concerning alcohol,—a diffusion which has made your discoveries a part of the personal knowledge of the children in the public schools of the United States, and through them of their parents also.

When the story of the scientific discoveries concerning the nature and effects of alcohol made by Sir Benjamin Richardson, of London, were first published, I knew the time had come to ask for the passage of temperance education laws in the United States, because those discoveries furnished well sustained data as to the truth concerning alcohol that should have the widest possible circulation. The need was urgent, for it was self-evident that the people would not stop drinking as long as they believed in the drink; hence we could not wait for men of science in our own country to reaffirm the findings of the laboratories of Europe.

THE PER CAPITA DRINK-CONSUMPTION OF FOUR GREAT NATIONS IN 1900

*Spirits : Solid Black**Beer : Dotted Portion**Wine : White Portion*

COUNTRY	POPULATION	BEER CONSUMPTION (per capita)	WINE CONS. (per capita)	SPIRITS CONS. (per capita)	TOTAL
United States	76,303,387	13.3 gallons	.3	1.1	14.7
Germany	56,367,178	27.5 "	1.5	1.9	30.9
United Kingdom	41,605,323	31.7 "	.4	1.1	33.2
France	38,641,333	6.2 "	25.4	2.	33.6

Science in America, facing a continent to be subdued, has chiefly occupied itself with searching for the hidden and elusive forces of nature which, chained to wheels and levers, have enabled man to accomplish the otherwise impossible and thereby serve human advancement. Modern science in America has thus contributed not only to its own but to the world's betterment in electrical and mechanical discoveries and inventions, but it has spent little time in scientific investigations of the alcohol question.

Professor August Forel, of Zürich, in an article published after visiting America, in 1899, justly rebuked the men of science in our universities for this neglect.

That deserved reproof will not be lost. The American is credited with being quick to learn, as well as alert in applying knowledge as soon as acquired. Nevertheless, if the temperance cause had waited for our men of science to move, disastrous would have been the consequences to the cause of sobriety; and it is doubtful whether the United States would have today the glad distinction of the comparatively small per capita consumption of alcohol indicated in the diagram on the preceding page.

ENACTMENT OF TEMPERANCE EDUCATION LAWS IN AMERICA

But the temperance cause did not wait for our brothers in the universities to act. A new force providentially appeared. Most incomplete is any history of the moral and mental development of the United States that omits the work of its women. The broad-browed, clear-eyed, warm-hearted American women saw in the power of alcohol to destroy individual capacity for self-government, not only the destruction of brothers, husbands, and sons, but of their country with its government by the people, unless those ravages could be stayed. Out of this conviction the Woman's Christian Temperance Union was born. Under the leadership of the late Frances E. Willard, a woman with great ability to rally and organize women for aggressive work in many lines against alcoholism, this became a mighty organization with auxiliaries in every town and city in all the land, pledged to total abstinence and to the elimination of the alcohol curse. This great army was ready to co-operate in carrying out the plans of the speaker for securing, through the public schools, a scientific temperance education for the children of the whole people.

The first law requiring this study was enacted in 1882. By 1902, through the action of Congress and the legislatures of every state, physiology and hygiene, which must include special instruction as to the nature and effects of alco-

holic drinks and other narcotics, had become a mandatory study for all pupils in the public schools of the United States. (See temperance education map on the opposite page.)

Although, under our system of home government in education by the states, these laws were the individual acts of forty-five separate state legislatures, and of Congress for all military, naval, and other schools under Federal control, and although it took twenty years to secure their enactment, this legislation has been but a small part of the work of engrafting this study upon the public school system of the United States. Every important requirement of the laws, and every essential doctrine taught in the text-books, has been a battle-ground that has had to be fought over in the domain of reason. These battles I briefly refer to, in the hope that, as your scientific investigations have helped us, our experience in applying these investigations to popular needs may not be valueless in your efforts to educate the coming generations of Europe as to the dangers of alcohol.

At the beginning of this, which is sometimes called the utilitarian age, it is said that mathematicians launched a malediction against those who would degrade pure mathematics by applying it to any practical purpose. So, certain of our physiologists objected to what they called the "degrading of the noble science of physiology to being a medium for teaching temperance." "If temperance must be taught, let it be in lessons by itself," they said. But the craving for alcohol is often induced by physical conditions resulting from unhygienic habits. Hence, if we are to prevent alcoholism, the people must be taught why they should obey all laws of hygiene, as well as those that call for total abstinence from alcoholic drinks and other narcotics. Some physiology is essential to the comprehension of these reasons.

Anything like force makes small appeal to the average American. He merely stands on the Declaration of Independence and waves the Stars and Stripes; but if you can convince his reason, you have him. Another characteristic of this same average American also helped. He believes in his home and in the mother of his children; hence, when the mothers of the land explained to its representative men in Congress and in the state legislatures why they wanted their children taught physiology and hygiene, including the effects of alcohol and other narcotics, laws requiring this teaching were enacted. Results justify these enactments.

(Continued in June Journal)

"It is not to the dreamer, but to the achiever that the world is indebted for its progress."

1882

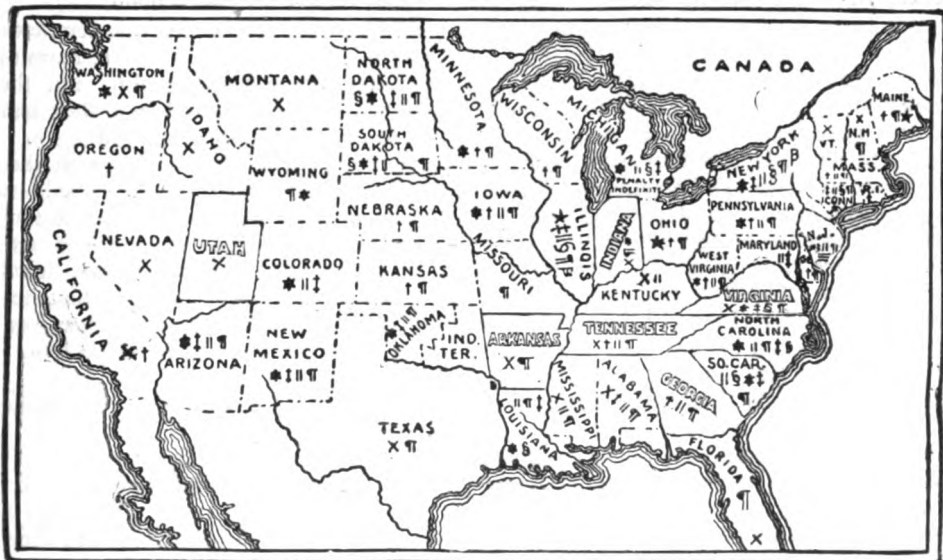
TEMPERANCE EDUCATION MAP OF THE UNITED STATES AND TERRITORIES



States in Black have no Temperance Education Laws

1902

TEMPERANCE EDUCATION MAP OF THE UNITED STATES AND TERRITORIES



States in White have Temperance Education Laws

EXPLANATION OF MARKS.—X The cross signifies that Scientific Temperance is a mandatory study in public schools.

* The star signifies that a penalty is attached to this statute.

† The dagger signifies that the study is required of all pupils in all schools.

‡ The double dagger shows that the study is required of all pupils in all schools, with text-books for all pupils able to read.

|| The parallel indicates that the study is to be taught in the same manner and as thoroughly as other required branches.

§ The section indicates that the physiologies for primary and intermediate schools must give one-fourth or one-fifth their space to temperance, and those for high schools at least twenty pages.

¶ The paragraph indicates that no teacher who has not passed a satisfactory examination in this subject is allowed to teach.

≡ Three lines indicate that text-books on this topic shall give full and adequate space to temperance matter.

B The beta signifies that a definite number of lessons for each school year has been made compulsory.

There are more than 22,000,000 children of school age in the United States, under Temperance Education laws.



Primary Lessons

THIRD YEAR

CIGARETTES

“KEEP your eye on the boy who drops his cigarette the last thing before entering the schoolhouse and lights it again the first thing on getting out,” says a keen observer. “You will find him in mature years occupying a place in the lower strata of society, or perhaps learning a trade under the tutorage of a prison master.”

Educators as well as business men are sounding the alarm over the cigarette habit, which they denounce as the most pernicious factor we have among boys. It is also one of the most universal, since the manufacture and sale of cigarettes have so increased that no boy can now escape the temptation to their use.

“It is a pity,” said one schoolman, “that boys must grow up and go through this thing in order to understand it. There ought to be some way to have them realize what they are doing before their brains become numb, their lungs permanently congested, and chronic bronchitis is fastened on them.”

There is such a way, and it lies through education. Not after the child has begun to smoke,—it is too late then; but before the first cigarette has touched his lips. Even the primary school is too late thus to reach some boys, but it can and should have the right of way with by far the largest numbers.

The cigarette curse ought to be stamped out by the strong arm of the law, but public sentiment on the subject is not yet strong enough to cope with the great moneyed interests involved. It will be, when a generation of lawmakers has grown up who are themselves free from the cigarette bondage. The possibilities of such a generation are in our public schools today. To realize them, we must begin with the children where we find them; and by every means in our power, with all the tact and skill of which we are capable, and in the way best suited to individual need, make sure that every child under our care knows why cigarettes are harmful

in themselves, and how they injure body, mind and character.

The millennium is not yet in this any more than in other evils, but it is as surely on its way as that right will ultimately triumph. It must be our concern to get in step with its onward march and hasten the day of its appearing.

(1)

WHY CIGARETTES ARE HARMFUL

Our lesson today is about a little paper-covered roll, not more than three inches long, and about as large around as a lead pencil.

It is covered with clean white paper and is very nice looking on the outside, but if we were to cut it open we should find it filled with a kind of coarse brown dust, not at all nice to look at, and which has a strong, bad smell.

What is the name of this queer little roll?

When I was your age I had never seen one, and there were none to be found anywhere. But all of you know that I am talking about a cigarette, and you probably saw a great many of them before you were old enough to go to school at all.

This is one reason why we are to have a lesson about cigarettes; because they are for sale in so many places, and because every boy, and perhaps a good many of the girls, will sometime be coaxed to smoke them.

If you are all to meet this temptation you must all know why cigarettes are harmful; then how they can hurt the health, and the brain with which we think; and how they can make people do wrong instead of right.

Do you remember the vine with the pretty red leaves that we saw in the woods one day last fall? Why did I tell you not to touch it?

Yes, it was poison ivy, and you remember that, although we all hurried away, John's eyes began to smart and little red blotches came out on his hands and face. There was something in the ivy that had poisoned him.

What is a poison?

John thinks it is something that makes your skin red and swell up.

Kate says a poison will kill you.

Ned says a poison makes people sick.

You are all partly right. There are a great many different kinds of poison, and they affect people in different ways.

Just being near poison ivy made John's hands and face red and swollen. Bad air poisons those who breathe it, by making them feel dull and sleepy. Then there are other poisons that hurt people or even kill them if they are swallowed and so taken into the stomach.

It takes a very wise person to know just what all the different kinds of poison will do to any one; but we can all remember this, that a poi-

son is something that hurts people. So the only safe thing to do when we know that anything is a poison is to let it entirely alone. We should neither touch it nor taste it, and we should keep as far away from it as we possibly can. Then we shall know it can not hurt us.

The little paper-covered cigarette does not look as if it could do any harm; but it does, because it, too, contains a bad poison. I will write the name of it on the board. Here it is:

The name of the poison in cigarettes is nicotine.

This is the reason why we ought never to smoke a cigarette.

This bad nicotine is not the same kind of poison that is in ivy, nor the same kind that is in bad air. It is a kind all by itself. If we were to take even a very little pure nicotine it would kill us, but as it comes in cigars and cigarettes it does not usually kill people.

What does it do to them? That is something for us to find out in our next lesson. Today we will try to remember that

We must let cigarettes alone because they contain the poison, nicotine.

A poison is something that can hurt us.

There are many different kinds of poison.

Each kind hurts people in a different way.

We must keep away from all kinds of poison. Then none of them can hurt us.

(2)

HOW CIGARETTES HURT THE HEALTH

Did you ever know a boy, or a girl either, who did not want to know why he had to do certain things, and why there were other things that he could not do?

You found out yesterday *why* you ought not to smoke cigarettes,—because in every one there is a little of the poison, nicotine.

Today we are going to talk about some of the ways in which this kind of poison hurts

people, if they are foolish enough to let it get into their bodies. Part of our talk will be a story about

THE THREE R'S

There were just three of them, two boys and a dog, and they were always together.

The boys' names were Ray and Rob, and the dog's name was Rover, but everybody called them the three R's, because all their names began with that letter.

One day somebody gave Ray a package of cigarettes, and both boys thought it would be fun to smoke them. There were five cigarettes

in the package, so Ray kept two himself and gave two to Rob. Then he offered the other to Rover, because they always shared everything with him.

Rover coughed and shook his head. He did not like the strong badsmell. He gave it one lick, then he shook his head again. He did not like the taste any better.

Ray and Rob got some matches and went down by the brook to try their cigarettes.

You can guess what happened. They had taken only a few whiffs before they began to feel sick. They thought they were going to die.

It was almost dark when they felt able to go home, and neither of them wanted any-

thing to eat. Rover had not tried to smoke, so he was ready for a good supper.

"You knew more than we did, old fellow," the boys said to him, "but we won't be so foolish again."

Ray never was, but by and by Rob forgot how sick he had been, and one day, when some one gave him another cigarette, he tried it once more.

It did not make him so sick this time, and in a week or two he found he could smoke as well as anybody.

Before he was ten years old he could smoke four packages a day, and there was a yellow stain on his fingers which he could not wash off.



"There were just three of them."

People began to notice that he was not growing so fast as his brother, and when it came to a race, Ray and Rover could beat him every time.

After awhile he stopped playing ball, because it made his heart beat so fast, and because, when he was at the bat, he could not always see the ball. Something seemed to be the matter with his eyes.

He did not get on well in school either, and twice he failed to make his grade. He did not like to study. It made his head ache and was too hard work.

When both the boys were men, Ray went into partnership with his father and built a nice house of his own.

Rob thought he would be a dentist, but he could not pass the examinations. He tried other things, but there was nothing he could do well, so one after another he gave them up. Now he spends his time lounging about town, doing nothing.

Tell this story (a true one) as graphically as possible. Have the children reproduce it in their own words. Ask which of these boys they would rather be. What made the difference in them? How was Rover wiser than either?

What could Ray do that Rob could not? What can we do if we are well and strong which we can not if we are weak and sick? What kind of health will a boy be likely to have who uses tobacco?

Make a blackboard list at the children's dictation of the ways in which cigarettes hurt Rob's health. Add others which have come under your own observation, or are well authenticated, until you have something like the following to be remembered :

Cigarettes can keep a boy from growing tall and strong.

They can give him a tobacco heart.

They sometimes injure the eyesight, and may even make him blind.

They can make a boy's hand tremble.

They can give him a stupid brain.

They can hurt almost every part of his body.

(3)

CIGARETTES A CAUSE OF OTHER BAD HABITS

I once read a kind of fairy story about a wonderful magician who was to give an exhibition in a town. The hall was full of people, and the magician called for boys from the audience to come to the platform for him to experiment on.

He selected one and waved his wand over the boy's head.

At once the boy began to change. His good clothes turned to rags; his bright eyes grew dim, his hands began to tremble; he looked sick and old.

People were amazed at the magician's power.

"Now change him back to our bright, happy boy again," cried his parents.

"That," said the magician, "I can not do. I can turn a boy into an invalid or an idiot, but no one can change him back to what he was before."

What would you do if this story were true, and if that magician were to come to this town and call for boys to experiment on? I think you would all give him a pretty wide berth. But there are just such magicians as that, right here in our stores, ready to turn healthy boys into invalids, to make bright boys dull, and to change good boys into bad ones. Can you guess the name of these magicians? It is the Cigarette family. We have found how they can injure a boy's growth and health and make him stupid; now we are to learn how they lead him into bad habits.

When you leave school you will want to go to work. How many business men will take you into their employ if you smoke cigarettes? Ask all those you know, and your fathers and uncles, and see what they say.

They will tell you they want the boys who work for them to tell the truth. Cigarette smokers are very likely to lie and deceive.

They want boys who are honest. Cigarette smokers often cheat and steal.

They want boys who are good workers, quick in their movements, and prompt to the minute. Cigarette smokers are slow and lazy and behind hand.

They want boys who are neat and clean. Cigarette smokers seldom care how they look.

They want boys who let liquor alone. Cigarette smokers are just the ones who drink.

Very likely they will give you other reasons, but these are surely enough to make any one resolve that he will never get into the power of such a bad magician as this.

Every time we are urged to smoke a cigarette, and every time we see them on sale, let us think of the long list of bad habits they can lead the user into, and refuse to spoil our health, our brains and our characters in any such way.

AUTHORITATIVE QUOTATIONS

THE POISON IN CIGARETTES

All the species of tobacco contain a liquid, volatile, poisonous alkaloid, nicotine, varying in amount from .612 per cent to 8.9 per cent. Nicotine is rapidly fatal to all animal life—

from the lowest to the highest form. Poisoning by nicotine, pure and simple, is rare. Tobacco-poisoning is very common, and has probably been experienced in a mild degree by every smoker in first acquiring the habit.—A. WYNTER BLYTH, in *Poisons*.

TOBACCO ALWAYS USELESS

Tobacco is always useless, often harmful, and sometimes homicidal. It is, of course, a poison. As for cigarettes, the filth sold as such is beyond description.—*London Lancet*.

TOBACCO STUNTS GROWTH

It is easy to see the effects of large amounts of tobacco in the stunted growth of adolescents, in functional cardiac disorders, loss of appetite, neurosis of motion, intellectual sluggishness, loss of memory, color-blindness, marked blunting of various functions of sensation.—T. H. MARABLE, M. D., Clarks-ville, Tenn.

TOBACCO IMPAIRS DIGESTION

The use of tobacco causes such a waste of saliva that digestion is certainly impaired by it. It impairs the appetite and lessens the eliminative powers of the body.—WM. M. MASON, M. D., Brooklyn, N. Y.

CIGARETTES A MENACE TO HEALTH

Judge Caldwell says: "Cigarettes are wholly noxious and deleterious to health. Their use is always harmful, and never beneficial. They possess no virtue, but are inherently bad, and bad only. Their every tendency is towards the impairment of physical health and mental vigor. It is a part of the history of the volunteer army in the United States during 1898, that large numbers of men, otherwise capable, had rendered themselves unfit for service by the use of cigarettes, and that among the applicants who were addicted to the use of cigarettes more were rejected by examining physicians on account of disabilities thus caused than for any other, and perhaps every other reason."—*Journal of Inebriety*.

CIGARETTES AND MENTAL ABILITY

Dr. H. F. Fisk, Principal of the Northwestern

University Preparatory School, has, according to *American Medicine*, put a ban upon cigarette smoking in the institution. Any boy who refuses to give up the habit will be obliged to leave, and his tuition will be refunded, as experience has proved to Dr. Fisk that "boys who smoke are no good to the school, learn nothing themselves, and set a bad example to the other students." Statistics prepared by him, covering a period of several years, show that of the boys who smoke only 2 per cent are among the 25 per cent of students who stand highest in class scholarship. On the other hand, 57 per cent of the smokers are among the 25 per cent lowest in class scholarship.—*British Medical Journal*.



"Sweet lilies, from thy dreams awake,
Behold 'tis Spring!"

DEWEY'S LESSON

Success tells how Dewey enforced a lesson on neatness and cleanliness. "While in a foreign port he ordered the heaviest hoisting tackle gotten out of the hold without delay. Nobody knew what it was for. After two hours' hard work the tackle was ready, and Admiral Dewey then ordered that a large 'chew' of tobacco which had been thrown under the guns should be hoisted and dumped overboard into the sea."

A SONG OF WAKING

The maple buds are
red, are red,

The robin's call is sweet;
The blue sky floats above thy head,
The violets kiss thy feet.

The sun paints emeralds on the spray,
And sapphires on the lake;
A million wings unfold today,
A million flowers awake.

Their starry cups the cowslips lift,
To catch the golden light;
And like a spirit fresh from shrift,
The cherry tree is white.

The innocent looks up with eyes
That know no deeper shade
Than falls from wings of butterflies,
Too fair to make afraid.

—KATHERINE LEE BATES.



Grammar Lessons

SEVENTH OR
EIGHTH YEAR

THE ORGANS OF SECRETION

CERTAIN American scholars find it surprising that at the Anti-Alcohol Congress just held in Bremen stress was laid on such a well-known fact as that the drinking man has not the same chance in life as the total abstainer.

Such discussion would have been unnecessary if people in general were as familiar as scientists with this fact. Unfortunately they are not. The ordinary man, and especially the ordinary youth, does not trouble himself with mortality statistics. Hence, he does not know that the drinking man is at a disadvantage in all diseases involving the brain, lungs, liver and kidneys. He does not find out until he tries to get his life insured that the habitual drinker is seldom accepted at any risk, if the company knows it. Nor does he realize until perhaps he has failed in business, or at his chosen profession, that even the moderate user of liquor is handicapped in mental acumen and brain power, in comparison with the total abstainer.

Such open discussions as were held at the Bremen Congress popularize these facts, take them out of the laboratory and the study, and bring them home to the people who stand so sorely in need of them. They reach the teacher and vivify her work in the schoolroom. They raise the standard of intelligence throughout the country and the world, and are thus helping to shape conduct and habits.

Something of this thought may well be suggested to pupils in upper grammar grades, who perhaps are occasionally tempted to belittle the study of temperance physiology. If they know that eminent scholars are giving time to the discussion and solution of health problems they will be encouraged to study the findings of these scientists and more willing to put the same into practice.

FUNCTION OF THE ORGANS OF SECRETION

Sooner or later every normal youth is inter-

ested in construction and eager to make something himself. Take advantage of this period to present the body as a manufacturer.

The class will know already that the different parts of the body are continually growing, or building themselves up anew, but there are also certain organs that have the power to make new substances, unlike themselves. These are the Organs of Secretion, and their work is so wonderful as to be of absorbing interest to young students.

Begin with the most important class of these organs,—that which has to do with the process of digestion. Have the class open their books and find the names of the digestive organs which thus make new substances.

When they have made a full list, the next thing to find is why each is necessary. Why, for instance, could not the salivary glands alone supply all that is necessary to digest our food? or the gastric, or the pancreatic glands?

This will lead to comparison of the different kinds of fluid secreted or made by these organs. Have the class find how the saliva, the gastric and intestinal juices, the bile and the pancreatic juice are unlike, and the kinds of food which each digests best. What kinds of food would pass through the stomach undigested if the gastric glands failed to work properly? What process of digestion would be interfered with if there were no salivary glands in the body?

In a similar way, study the secretions of other organs of this class,—the oil and perspiratory glands of the skin, the lachrymal glands of the eye, the glands of the ear which secrete wax. None of these glands help to digest food, but they are all of great importance. Show why in each case.

There are membranes as well as glands which act as organs of secretion. Find which these are, and have each pointed out from a chart. Compare the fluid secreted by the synovial membrane to the oil used to make a door move easily on its hinges. Where in the body do we find synovial membrane?

Find the difference in function between the periosteum, the membrane which covers the bones, and the synovial membrane of the joints. How is the periosteum of special value when a bone is broken or injured?

Think of reasons why mucous is all the time being secreted in the throat and nasal passages. Why is there more of this fluid when one has a cold?

ADAPTATION TO WORK

Examine with the class all pictures of glands and membranes shown in their physiologies. Why are not these organs, which do the same kind of work, exactly alike in size, shape, and general formation?

In helping them to answer this question, call attention to the varying amounts of room which can be given to these organs in the body. This will explain many differences between the liver and the pancreas, for example, and between other glands. It is just as necessary for the organs of secretion to adapt themselves to the place where they have to do their work, as it is for the bones or muscles to be long or short, thick or thin, straight or round, according to their position in the body, and the kind of work they do.

In some instances the organs of secretion are themselves a part of other organs, as in the case of the gastric glands of the stomach. Show by diagram how these are adapted in size and shape to their place in the stomach.

By similar diagram explain how the perspiratory glands of the skin are so arranged as to allow the greatest possible size in the smallest amount of space. Why are both size and economy of room necessary here?

Find a gland which has more than one kind of work to do. How does the structure of the liver fit it to act as an organ of secretion, as a storehouse for any excess of sugar that there may be in the body, and as an organ first of assimilation and then of excretion?

Find other organs of secretion which must act as excretory organs as well. How does the way in which each is made fit it for this double work?

NECESSARY CARE

Every workman knows that he must take care of his tools if he expects to do good work with them. If we think of the organs of the body as the tools which one must use in doing all kinds of work, it will be easy to understand why they too must be kept in perfect repair.

How can one take care of the tools we have been studying about in these lessons, the organs of secretion? The way to find out is to think

first what they are to be used for, and then what will help them to do their work.

The organs of secretion which help digest our food must have enough to do, hence we must eat the kinds of food which each can act upon. Name foods which will give work to the salivary glands; to the glands which secrete the pancreatic juice; to the liver; to the glands which secrete intestinal juices. Why should starchy foods be well cooked, while eggs should not?

Rest is needed by the organs of secretion as much as work. Why is this a reason for not eating between meals? How does chewing gum or tobacco overwork the salivary glands? If it is a part of the work of the liver to store up sugar, why is it not a good thing to eat much candy? Why is it better to eat oatmeal without sugar?

Other organs of secretion, such as the glands of the skin, the eye, and ear, and the membranes which surround bone and muscle, and line the air passages, work in different ways, so need different kinds of care. Have the pupils find by reference to their books what this should be in each case.

INJURY DONE BY ALCOHOL AND TOBACCO

Unless one is a physician or chemist it is not easy to find out by actual experiment just how alcohol or tobacco injures such parts of the body as the organs of secretion, most of which are out of sight. For this reason we must take the word of scientific men who have performed such experiments.

Many of their investigations are given in the school physiologies for these grades. Have all such which relate to the organs of secretion read aloud, a paragraph at a time, by different ones in the class, and explain any word or expression which may not be readily understood.

Have the class make a list of all the ways mentioned in which these organs are themselves injured by alcohol or tobacco, and also ways in



"Bright flower faces,
With their coy and dainty graces,
Lure us to their hiding places."

which their work is hindered or made less effective by either substance. Call for reasons for each statement given, to make sure that these are thoroughly understood. For instance, if some one finds that chewing tobacco causes indigestion, have all the steps explained which lead up to this result,—the excessive flow of saliva caused by the act of chewing; the dryness of the mouth and throat which follows, as the salivary glands become temporarily exhausted; then, if food is taken, the lack of saliva to soften and help digest it; and, finally, the fermentation of food thus imperfectly digested, and its consequently disturbing effect on the digestive organs.

Supplement the statements of the text-books by the authoritative quotations which follow, using the same method. Ask the pupils also to bring to class statements from other authorities which they may notice in papers and magazines.

The final summing up should bring out the thought that it is especially necessary to protect these hidden parts of the body from possible harm, because they can not easily be got at to be repaired when injured, and because each is so intimately connected with the welfare of the body as a whole that it can not suffer alone, but must needs react disastrously upon the health of the individual.

AUTHORITATIVE QUOTATIONS

NICOTINE IRRITATES MUCOUS MEMBRANE

Nicotine acts as a mechanical irritant to the mucous membrane of the bronchial tubes, and if a bronchitis be present it maintains an irritable state of the membrane and keeps up a cough. Thus, by the lessening of the bodily vigor, the person is unable to withstand disease, and, if he inherits weak lungs, he may easily become a prey to tuberculosis.—*Journal of Inebriety*.

NICOTINE A PRE-DISPOSING CAUSE OF CATARRH

Regarding glandular activity, it may be said that nicotine stimulates secretion in general, as is illustrated by the influence upon the mucous glands of the mouth and general alimentary tract. This overstimulation of the mucous area would naturally lead to the development of catarrhal affections.—J. W. SEAVER, A. M., M. D., New Haven, Conn.

TOBACCO A CAUSE OF INDIGESTION

When tobacco and chewing-gum are placed in the mouth and kept there until time for a meal, the salivary glands are not only unable to secrete enough amylolytic ferment to aid in the digestion of the starch, but are also unable to secrete enough fluid to soften and disintegrate the food thoroughly, and, as a result, the indigestion of all articles of food ensues, since the

pabulum, when swallowed, is not in a fit condition for gastric or duodenal digestion.—*Dietetic and Hygienic Gazette*.

ALCOHOL WEAKENS DIGESTION

Alcohol excites the mucous membrane of the stomach and causes it to secrete gastric juice. Later, by overaction, it impairs the secretion, weakens digestion, and finally induces organic changes in the stomach structure.—I. D. MISHOFF, M. D., Milwaukee, Wis.

ALCOHOL PRODUCES DISEASED LIVER AND KIDNEYS

Alcohol produces diseases of the liver and of the kidneys, because these glands are most concerned in the elimination of any poison, and are always, until they are structurally deranged, engaged in removing it from the body.—G. H. McMICHAEL, M. D., in *Journal of Inebriety*.

WORK OF LIVER IMPAIRED BY ALCOHOL

The extensive anatomical changes wrought in the liver [by alcohol] must necessarily interfere with its activity in producing bile, and must impair its glycogenic function and its power to destroy ptomaines.—J. W. GROSVENOR, M. D., Buffalo, N. Y.

ALCOHOL DISTURBS EVERY PHYSIOLOGICAL PROCESS

For the system to rid itself of alcohol requires an expenditure of force which should be used for the nutrition of the body, as it disturbs every physiological process. At its very entrance the foe is met by nature with water. Three pounds of saliva is secreted in twenty-four hours. As this is largely water, alcohol begins to burn with a quenchless flame as soon as it enters the mouth, continuing on its destructive way to the stomach, causing by its irritating action an excess of gastric juice, but one not so strong in digestive power.—M. A. GILLETTE, M. D., in *Bulletin of American Med. Ass'n*.

THE DAISIES

At evening when I go to bed
I see the stars shine overhead;
They are the little daisies white
That dot the meadow of the night.

And often while I'm dreaming so,
Across the sky the moon will go;
It is a lady, sweet and fair,
Who comes to gather daisies there.

For, when at morning I arise,
There's not a star left in the skies;
She's picked them all and dropped them down
Into the meadow of the town.

—FRANK DEMPSTER SHERMAN.

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Apple blossoms, budding, blowing,
In the soft May air;
Cups with sunshine overflowing,
Flakes of fragrance, drifting, snowing,
Showering everywhere.

—LUCY LARCOM.

EDUCATION DOES EDUCATE

ASCHOOL superintendent calls attention to the fact that Vermont passed a law twenty years ago requiring the study of "stimulants and narcotics" in all the schools of the state, with text-books in the hands of all pupils who could read, and asks how it happens after all these years of temperance teaching, when all the boys to whom these books were first given are voters, that that state has now reversed her policy of fifty years of prohibition by passing a local option law which opens the saloon in six cities and more than eighty out of the two hundred and forty towns.

Is it true, as some fear, that education does not educate, and that we are on the wrong track in teaching temperance physiology to all pupils in all schools?

It would seem so, in Vermont at least, to judge merely from a superficial examination of present results, but a wise judge will reserve decision until all the facts are in.

What are the facts? It is true that Vermont, in 1882, passed the first law ever enacted requiring the public school study of the nature and effects of alcoholic drinks and other narcotics as a part of physiology and hygiene, but it was a very weak law, and instead of reaching all pupils, practically resulted in putting the study into high schools only, thus reaching hardly more than five per cent of the pupils.

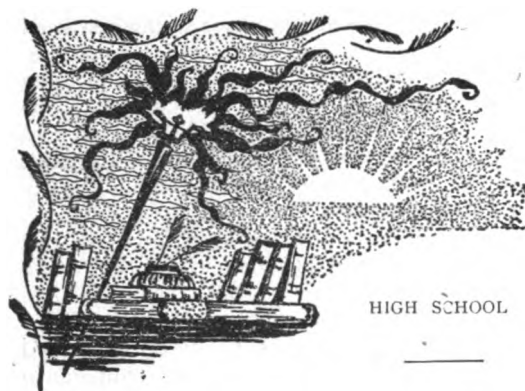
Four years later, the Woman's Christian Temperance Union of that state, realizing that the temperance education of a mere fraction of the coming voters would not lead to personal

prohibition in the majority, nor strengthen legal prohibition in the state, petitioned for and secured, in 1886, a stronger temperance education law, requiring temperance physiology to be taught orally to all pupils unable to read, and with graded text-books in the hands of all pupils who had books in other subjects, with a penalty for non-enforcement.

If such a law had remained in force for any length of time, results today might have been far different, but, in 1888, the legislative bill for the consolidation of the school laws of the state, through mistake or otherwise, failed to enumerate the new scientific temperance instruction law with those to be retained with the other codified laws, and specifically cited it, by number, as one of those which "are hereby repealed." Thus this strong law was in operation only two years, hardly long enough to be got into practical working order, and certainly not long enough to admit of practical results.

The next legislature restored the first old law with no requirements for the study in the lower grades, no text-books for pupils' use, and no penalty for non-enforcement. The sequel is recorded on the ballots cast last February which gave the towns and cities of the Green Mountain State, the right, if they so choose, to make "covenant with sin and death in licensing the sale of the greatest of all causes of degeneracy and crime." New York, on the other hand, has had a strong temperance education law, reaching all pupils in all schools, in force for seven years; and in spite of her enormous yearly immigration from wine and beer drinking lands, and her great wealth invested in wine and brewing industries, that state has already so increased the license fee that liquor sellers are threatening to go into other business or cut in two every glass of beer they sell.

Blackstone says, "Law is embodied sentiment." Prohibitory law is embodied sentiment against alcohol. Such sentiment must be made by education, before it can be embodied into statutes, and when once secured must be maintained by teaching each succeeding generation that alcohol is by nature an outlaw which must be driven out. Only thus can prohibitory statutes be perpetuated. A stream will not rise higher than its source. The chief source of anti-alcohol sentiment in the twentieth century is the schoolhouse. The states that year after year teach, as a progressive study, all their children, especially in the lower grades where alone the largest possible numbers can be reached, the physiological reasons for obeying the laws of health, including those that teach total abstinence from alcoholic drinks and other narcotics, are the nearest to the overthrow of the awful dominion of alcohol within their borders.



ORGANS OF THE BODY

LORD Kelvin's summary of the progress of inventions applies equally well to almost every other field of intellectual attainment. He said: "What yesterday I should have declared impossible I have today seen realized."

Man is able to achieve ever greater results, because his health and physical capacity for work have kept pace with his mental growth. Every year more attention is paid to hygiene and sanitation in the schoolroom, the home and the community, and, in consequence, epidemics are disappearing and the death rate is continually being lowered.

Increased knowledge of the dangers inherent in alcoholic drinks, tobacco, and other forms of narcotics, and of their power to lessen human endeavor, will as surely lead to total abstinence as another of the pre-requisites to health. The successful man of the future can not afford to drink, because he must have a sound body, and even moderate drinking weakens nearly every organ; he must have mental vigor, and wine scatters the wits; he must be of unblemished character, and alcohol is a known perverter of morals.

NEED OF AN ORGANIC SYSTEM

Among nations the number of employments increases with civilization. A savage builds his own house, gets his own food, makes his own clothes, supplies all his wants. In the most progressive countries, on the other hand, there are hundreds of different occupations, and by doing only one kind of work a person is able to do it infinitely better than would be possible if his energies were scattered over many kinds.

In a similar way, compare the one-celled amoeba, which has only a single organ with which to move, breathe, feel, eat, and digest its food, with man who has a separate set of organs for each of these functions. Lead the class to see how this difference in structure accounts for man's pre-eminence.

Study the organs of the human body from two points of view,—that of the work which each does by itself, and that of the way in which this work is made of use to the body as a whole. For example, the organs of circulation are arranged to keep a constant supply of blood flowing through every part of the body. What has this circulation to do with the bones? the muscles? the skin? The special work of the lungs is to act as breathing organs. How is this function related to that of the muscles? to that of the nervous system? In the same way, explain the individual work of all the organs, and show their interrelation.

When this work has been thoroughly done, call attention to the fact that, although made up of so many different organs, each with its own peculiar function, the body always acts as a unit, not as a collection of parts. When we think of a person we think of him as a whole, not as a being made up of arms and legs, a trunk and head. What is the great co-ordinating system which makes this unity of action possible?

FACTORS IN ITS DEVELOPMENT

Unlike all other machines, the human body is a growth, and as such every organ must be constantly supplied with proper building materials. This means knowledge of the selection and cooking of foods and of the kinds to be used together; of adaptation to climates and seasons, and individual needs including the amount of money which can be used for this purpose; so that wherever one may be or whatever his condition he may know that he is putting into the building of his body that which will tend to its highest development.

After thorough study of foods with these points in mind, call attention to other particulars in which the care of the body differs from that of any other organism. First, it needs stated periods of exercise and rest. What determines how much of each should be taken and what kinds? Most machines keep in better condition and last longer if kept out of the sun. Why is the opposite true of the body?

To promote the growth of the body, one must know how to avoid what is harmful as well as to choose what is necessary. Probably every youth nowadays of high school grade knows in a general way that among such harmful substances are to be classed all narcotics, including tobacco and every form of alcoholic drink. In addition to this bare fact, he should know how each organ of the body may thus be injuriously affected and kept from its best development, and how the injury of any one part of the organism may react disastrously on the whole.

Use the latest and most carefully revised textbooks, the indorsed physiologies, as a basis for

this study, supplementing these by reference to current medical journals and such other literature as may be found in the libraries at hand. Get the opinion of the healthiest and most perfect physical specimens of men and women as to the effects of narcotics upon the human system, and finally take the consensus of opinion of all the ages, that even the moderate use of any narcotic drug leaves a scar on the nerves.

"Each of them, if used to excess, brings on insanity, incapacity and death. With each of them the first use makes the second easier. To yield to temptation makes it easier to yield again, and the weakening effect on the will is greater than the injury to the body. He is the strong man who can say *no*. He is the wise man, who for all his life, can keep mind and soul and body clean."

from his experiments that alcohol is a true food, that is, that it is capable of becoming a part of the substance of the organism."

M. le docteur Charles Richet, of the Academy of Medicine :

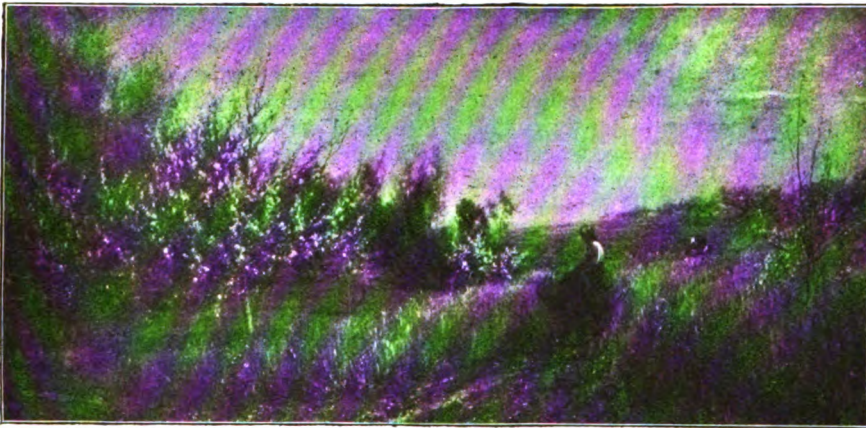
"If one could completely abolish alcoholic drinks, one would perhaps destroy a very small amount of food, but one would render an immense service to humanity."

M. Metchnikoff, chief attendant, Pasteur Institute :

"I am convinced, as far as I am concerned, that alcohol is a poison."

M. le docteur Lancereaux of the Academy of Medicine :

"Alcohol is dangerous, not only for its effects upon the nervous system, but particularly for



"Wake, Nature, wake, thy slumber time is o'er. Spring's gentle tread
Adown the forest aisles draws softly near; 'tis dawn o'erhead!"

ANTI-ALCOHOLISM IN FRANCE

As a result of the recent agitation in France over the question of alcoholism, the government has instructed the Academy of Medicine to determine among the alcoholic essences in use those which ought to be absolutely proscribed and those which should be regulated by law. The Academy of Sciences also published a decree that instruction be given as to the dangers of alcoholism. The following is a bill placarded under the auspices of the Society of Temperance of Paris and given wide publicity :

VERDICT OF SCIENTISTS CONCERNING ALCOHOL

M. Berthelot, a member of the Academy of Sciences and of the Academy of Medicine :

"Alcohol is not a food because it is combustible. . . Atwater, himself, did not conclude

the *denutrition* which it produces in the organism that indulges in it to excess."

M. le docteur Hericourt, director of the *Revue Scientifique* :

"Alcohol, even in the dose which some persons like to call hygienic, may be a cause of death, by diminishing the resistance of the organism to infectious diseases."

PHYSIOLOGY TOPICS FOR MAY

PRIMARY—Care of the Body. Right Position. Review of the Senses. Cigarettes.

INTERMEDIATE—The Special Senses. Physical Exercises. Muscles.

ADVANCED—Secretion. The Skin and Cleanliness. Organs of the Body.

THE BREMEN CONGRESS

DURING Easter week fourteen hundred delegates, representing both hemispheres and fifteen different nations, and distinguished for their achievements in science or in the service of humanity, university professors and men of hereditary rank assembled in Bremen, Germany, for the ninth biennial session of the International Anti-Alcohol Congress.

Among the subjects discussed were the teachings of science concerning the moderate use of alcohol and the effects of such use on every phase of human progress. Two schools of thought were represented,— the moderates, calling themselves “the temperate school,” and the total abstiners, or “the abstinence school.” No resolutions were passed, by common consent, but the applause for the testimony of science and experience in behalf of total abstinence showed the “moderates” to be in the minority.

The statement of Dr. August Forel, one of the foremost authorities in the world on brain and nerve diseases, that neither science nor experience furnishes evidence to justify calling alcohol a food, called out prolonged acclamations. Professor Berens, director of the German School of Art at Düsseldorf, in an admirable paper on “Alcohol and Art,” showed that alcohol, by dulling the spiritual aspirations essential to the greatest work, is an enemy of the highest attainment in art. The papers read by notable members of the Congress during the six days of the session will fill two or three volumes and soon will be printed for wide distribution.

As the American representative, Mrs. Mary H. Hunt addressed the Congress on “The Significance of Scientific Temperance Instruction in Public Schools as a Preventive of Alcoholism,” which led to a discussion in which twenty speakers took part, nearly all of whom commended the extension of the American method for the prevention of intemperance. Mrs. Hunt’s address will appear in full in this and the following issue of the JOURNAL. It was enthusiastically commented upon by the press as one of the features of the Congress, and Mrs. Hunt herself was honored by being asked to preside at Saturday’s session.

Readers of the JOURNAL will be interested to know that the officers of the Congress, recognizing the pre-eminent fitness of Mrs. Mary H. Hunt, the World and National Superintendent of Scientific Temperance Instruction, to speak authoritatively concerning temperance education in the United States, sent an urgent request to President Roosevelt asking for her appointment as the representative from this country. This request was sent out over the signatures of the

Secretary of the Home Department of the German Empire and the Mayor of Bremen, the honorary presidents.

In response to this solicitation, special letters of introduction were issued to Mrs. Hunt by the Department of State, signed by Secretary Hay; and the courtesies of the Congress were also bespoken for her by Baron von Sternberg, the German Ambassador at Washington.

MISTAKEN CRITICISM

THE *Buffalo Courier* of recent date reports an address on “Alcoholism” by Dr. Ernest Wende, a former Health Commissioner, in which the school text-books that contain teachings on the subject of alcohol are criticised as “in the main untrue” and tending to breed falsehood, because they teach that alcohol is a poison.

If the indorsed physiologies are referred to, they do teach exactly this fact, and in so teaching they are amply supported by many of the most eminent scientists of the day. In every instance, however, care has been taken to preface such statements with a definition of the term, poison, which explains that while a poison by nature injures the body that absorbs it, it need not and does not necessarily destroy life. There is thus no danger that the child, fresh from the physiology class, will expect to see his father drop dead upon drinking a glass of beer.

Again, in the article referred to, it is denied that alcohol is not a food in any sense. On this point also the books are in accord with the latest scientific investigation, in teaching as they do that alcohol is not a food, in the general acceptance of the term. A food is a substance which will nourish the body without injuring it. When alcohol is taken in sufficient quantities to make any food value it may possess appreciable, its poisonous action predominates.

It is also the opinion of the writer quoted, that the books should teach the varying degrees of harm wrought by different liquors. He would have the children taught that since beer is less harmful in its immediate effects than gin or whiskey, the person inclined to drink should take beer. To assume such a position is to fail to grasp a fundamental principle of true temperance teaching, namely that pupils must not be taught to choose among different alcoholic beverages, but to let all liquor alone; not to be moderate drinkers, but total abstiners. Moderate drinking paves the way for immoderate drinking, and the beverage of even the most moderate drinker contains alcohol which is always a protoplasmic poison, whether it comprises one or fifty per cent of the containing liquor.

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THE SCHOOL PHYSIOLOGY JOURNAL



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• CONTENTS •

	PAGE
A Preventive of Alcoholism (<i>Continued</i>)	145
Primary Lessons—Review Work—The Child in Vacation	150
Editorials	153
Grammar Lessons—Review Exercises—Preparation for Work	154
High School—Review Work—Opportunities of To-day	156
Book Notices	158
Index to Volume XII	159

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VOL. XII. NO. 10
JUNE, 1903

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School Physiology Journal

Vol. XII

BOSTON, JUNE, 1903

No. 10

THE FIRST LYRIC

What keen, sweet rapture must have thrilled
The heart of Nature when she heard
The first glad lyric of a bird !
When that impassioned music spilled
From out the deeps of dawn—ah me,
'Twas then God fashioned Ecstasy !

—HERBERT BASHFORD.

A PREVENTIVE OF ALCOHOLISM

SCIENTIFIC TEMPERANCE EDUCATION IN THE PUBLIC SCHOOLS

NEW YORK STATE, with a population of 8,000,000, has one of the best temperance education laws. In 1902, that law having been in force seven years, a committee of citizens, in co-operation with the Woman's Christian Temperance Union, made a careful canvass of that great state, inquiring of parents in every county as to the effects of this study upon their children.

RESULTS OF TEACHING GENERAL HYGIENE

The results of the investigations were published in a sixteen-page pamphlet. The Committee says :

"Parents testify that, as a result of this study, the children practice and bring home the truths of general hygiene learned at school. They insist upon proper ventilation of sleeping and living rooms, and tell how to get it. They comment on the danger of drains or pools of stagnant water in cellars, dooryards or near wells, and urge the necessity of using pure water. The importance of eating slowly, and at regular intervals; the proper selection and cooking of food; its adaptation to season; suitable dress; the danger of draughts; are facts learned at school and put to practical use by the children. They ask for tooth-brushes and individual towels, and object to public drinking-cups. They become little rebels against dirt and disorder in the home, and help to secure better conditions. Mothers say, 'Take any other study out of the schools, but *leave this*.' Their testimony in this respect is almost uniform.

"One mother says, 'I have been surprised and delighted for years with the information the

children in my large family have gained in hygiene as well as in temperance in the schools. The work is thorough and real and is influencing the home.'

"Another says, 'Even if the temperance part were left out, the rest would be absolutely essential. With the temperance instruction, it becomes the most important study pursued in the common schools.'

"Still another says, 'This teaching is helping some children to observe certain laws of health which their parents do not know about and can not teach them.'"

The Committee further says :

"No one who looks over the voluminous testimony from all parts of the state can fail to see that there is a growth of widespread, intelligent practice of general hygiene, including total abstinence, in the lives and homes of our young people resulting from this study; and that the statute requiring it is accomplishing what it was destined to accomplish. . . . These results will increase in number and influence as the years go by and methods of teaching are perfected. . . .

"Even if nothing more has been accomplished than is told in the reports in the hands of the committee, which we believe give but a faint idea of the good actually being done throughout the state, the people of New York would have abundant reason for gratitude to the law-abiding teachers of our public schools for the faithful work most of them have done in teaching this branch, in spite of opposition and hindrances encountered, where they should have had help."

This education has been nearly universal in the United States for between ten and fifteen years. The last census shows that during that time there has been in our country a gain of four and one-tenth years in the average length of life, and physicians who are familiar with the facts admit that the instruction in physiology and hygiene in the public schools, by increasing popular knowledge and observance of sanitary laws, has helped to secure this end.

METHODS WHICH SECURED THESE RESULTS

The question, in what grades this study shall be pursued, has been another field for debate. Exhaustive study of statistics of school attendance, to find where in the school course this

subject should be pursued to insure that "all pupils in all schools" shall get it, shows that, including the children of the colored population of the south, and of the immigrants from other lands who are pouring into the north of our country, the average school attendance is about five years of two hundred school days each.

Hence, we have learned that, to reach the largest numbers, this instruction must begin with the children in the lowest primary classes and proceed progressively through the grammar grades until the whole subject, suitable to be taught in the public schools, is covered.

But it may be urged that scientific temperance is a technical study that little children can not understand. The little child who is taught that one and one are two has taken his first lesson in mathematics. Just as simply may he get the first lessons in hygiene, including total abstinence, which will help shape the physical habits he is constantly forming, new ones each year. For these reasons, almost all our laws require the study to be taught all pupils in all public schools. This ORAL LESSON BOOK for the primary teacher's use, which I hold in my hand, contains an adequate number of illustrated lessons for each of the three primary years, showing what to teach and how to teach it.

The subject matter to be taught comprehends the physiological reasons for obedience to the laws of health, including total abstinence from alcoholic drinks and other narcotics, with physiology enough to make all intelligible. Careful study shows that the subject is large enough to furnish new and important material for three lessons per week for ten weeks of each school year through the three primary years, and four lessons per week for ten weeks per year through the five grammar years and the first year of the high school, with no more repetition than is necessary for reviews. This makes in all but 330 lessons in the whole subject, distributed through nine years, while from 600 to 900 lessons in geography are usually given in the same time. Our best laws, like those of New York and Illinois, specifically require such an amount and arrangement of lessons. Thus, without crowding other branches, a progressive development of this important study is secured for the pupils for an adequate time during each of the years in which, especially, habits are formed. Where, in addition to oral instruction in primary years, this study has been pursued for five years with good, well-graded books in the hands of pupils who have books in other studies, a revolutionizing effect is manifest in a community. Who can estimate the ultimate results of continuously instilling such saving truths into the minds of the children of a state and nation?

Scientific temperance as taught in the public schools of the United States has been, not a creation of facts—you helped furnish those—but a collection and arrangement of truths for school use, for which there was no precedent to follow. When the first temperance education law of New York was enacted, in 1884, for which, by the way, President Roosevelt, then a member of the New York legislature, voted, there was not in all the world a school text-book teaching the nature of alcoholic drinks and other narcotics and their effects upon the human system in connection with physiology and hygiene, as our laws require.

If the average American had not believed that if he did his part for the children in this matter the mothers would do theirs, our law-makers would never have enacted statutes requiring a study, the school literature of which was then unwritten. The Department of Scientific Temperance of the Woman's Christian Temperance Union, of which it is the fortune of the speaker to have been superintendent from its inception until now, has, from the first, kept up an exhaustive investigation of the findings of science on the alcohol question, all of which have been topically classified and kept on file. Thus there is, at the department headquarters, an invaluable and constantly increasing collection of the results of modern scientific investigation on the physiological effects of alcohol in any quantity. This is ready of access for the writers who put these truths into the school text-books for all grades, and which millions of children in the schools of the United States are now studying.

The general supervision of these books in the United States is in the hands of the Text-Book Committee of the Department of Scientific Temperance Instruction. There are, on this Committee, six physicians, three of whom are professors in medical schools of our universities, and four other members, specialists in education and ethics. All criticism of this literature is referred to this Committee who carefully consider the same, securing correction in the texts, if facts require it. This labor is performed without remuneration of any kind.

Sometimes a man in our colleges or elsewhere who has not studied this science objects to the study, on the ground that the text-books are not accurate. All such are politely requested to point out the claimed inaccuracies. This furnishes the opportunity to refer such critics to the testimony of investigators which we have on file as to the truth questioned. Thus, the testimony of Professor Fick of Würzburg, Professor Kassowitz of Vienna, Professor Bunge of Basel, Dr. Forel of Zürich, Professor Kræpelin of Heidelberg, Dr. Bienfait of Liège, Dr. G. Sims

Woodhead of England, with that of Doctors N. S. Davis, W. S. Hall, John Madden and others of the United States, has furnished ammunition for our battle against alcohol in the republic, for which we are profoundly grateful.

PROFESSOR ATWATER

In 1899, when all seemed to be going well, total abstinence principles and habits increasing, the per capita consumption of alcohol falling a little, and the brewers and saloon keepers were complaining of loss of profits, Professor Atwater threw a bomb into the otherwise peaceful camp, in the shape of an announcement, reported in practically every newspaper in the land, that he by actual experiment had proved that two and one half ounces of alcohol, the equivalent of one bottle of Rhine wine, or three glasses of whiskey per day, is a food "protecting the material of the body from consumption as effectively as corresponding amounts of sugar, fat and starch." Not until five months after this newspaper promulgation of Professor Atwater's so-called experimental discoveries,

was the formal report of the same published with tabulated data, making it possible for any one to see just what did happen to the men shut up in the calorimeter and fed with alcohol.

Meanwhile the drink traffic and the bibulous had improved the time by promulgating as widely as possible this food theory in advocacy of moderate drinking. Professor Atwater openly denounced the teaching in the schools and the text-books containing it. But when his report was finally published, scientific men quickly pointed out the fact that, instead of proving alcohol to be a food, the tables of the Atwater experiments proved it to have acted on the man experimented upon as a protoplasmic poison. This fact the friends of total abstinence made generally known, and thus the Atwater attack became a help rather than injury to the cause, verifying the saying of Carlyle, "Bitter denials and contradiction of truth always furnish the most luxuriant soil for its growth."

The advocates of the Atwater theory tried to defend their position by juggling with the definition of the word, food; claiming that alcohol is "a technical food," "a food in an academic sense." Meantime, the definition of food, intelligible to the laity on our side of the water, as rational, inclusive and exclusive, is "Any substance whose nature it is, when absorbed into the blood, to nourish the body and repair waste, and furnish heat, without injuring any of its parts." Tried by that definition, alcohol is certainly not a food. The definition of a poison in all our indorsed text-books is substantially that of Alfred Swaine Taylor, M. D., of England, in his work on Medical Jurisprudence. Our books therefore teach that "A poison is any substance whose nature it is, when absorbed into the blood, to injure health or destroy life." This definition fits the story of the effects of alcohol on the human system.

The agitation over the Atwater theory had largely subsided in the United States until it echoed back to us a few weeks ago from France. But if France will examine his tables she will learn, as



Rathaus, in which a breakfast was given to prominent guests of the Ninth International Anti-Alcoholic Congress, by the Senate of Bremen.

has the United States, that Professor Atwater did not prove that alcohol is a food, in the sense in which the people understand the meaning of the word. As the question of whether alcohol is a food is sure to be a part of the further conflicts for total abstinence, a clear-cut, non-technical definition of the word food, generally understood and accepted by the advocates of that abstinence will help in the battle before us.

RESULTS OF TEACHING TOTAL ABSTINENCE

The reports of the results for total abstinence of this teaching, gathered from the parents of the children in great States like New York and Illinois are most inspiring. The habits of the children are not only being shaped against the use of alcoholic drinks and other narcotics by this study, but the children are persuading their parents to abandon such use when already begun.

Perhaps some American tourist who knows little or nothing about the work, for some such may still be found, will respond to your inquiry about temperance education with the remark "It is a woman's movement," accompanied with a shrug and a rising inflection on the word, woman. Nevertheless, it is a movement that has taught industry and commerce that, by injuring working ability, alcoholic liquors of any kind are the greatest enemy of both employer and employe—a lesson that has been to the enormous financial profit of both capital and labor.

It has put the hand of a total abstainer on the throttle of nearly every engine, and total abstaining conductors, trainmen, switch-tenders and employes of all kinds in places of responsibility in all the great railroad systems of our nation of 79,000,000 people. It has made total abstinence a condition of employment in almost all lines of business, and thus has made the American workman a better producer because a sober one, furnishing an important factor in the commercial competition of the United States with other nations. It has helped create the public sentiment that has abolished even beer from the United States soldier's canteen, while his rations are otherwise improved. It has taught the people, who are the source of power, that the men who are to defend their flag must be sober men, strong to defend the right. It has diminished the sum total of diseases resulting from the use of distilled drinks, although those consequent upon beer-drinking are increasing, due to the immigration of beer-drinkers from other lands. But even here there is hope of better things, for our public schools are teaching the children of these new-comers to abhor beer, and we have just prohibited its sale at the stations at which they first land on our shores. Furthermore, the last report of the Internal Revenue Department at Washington shows that during the last eleven years, during which the laws requiring temperance education in the public schools of the United States have been quite generally in force, the per capita gain in the use of alcoholic liquors throughout the country is three times less than it was in the eleven preceeding years when there was little or no public school study of this subject.

Let none say that I give no credit to other temperance efforts. They have been wonderful factors in the battle; but without scientific temperance education in the public schools they did not and could not secure all the gain we now rejoice over.

Do you say that in prescribing the educational method I have not referred to the inevitable conflict before us with the moneyed interests involved in the production and sale of alcoholic

drinks? If so, I quote to you, as I have to my own countrymen, a text of Holy Writ paraphrased to meet this condition: "Seek ye first the temperance education of the children, and all other temperance blessings shall be added unto you." When a majority of the people are too intelligent to want alcoholic drinks, the trade in the same will be forced to seek other avenues of profit.

But some one may say, "Such education would injure a great industry; my country is the land of the vine, or of the brewer." In pleading for this education before committees in Congress and in legislatures of different states, I used to show from facts and figures that every dollar of tax on fermented and distilled liquors paid into the municipal, state, or national treasury cost the people thirty dollars to take care of its consequences, in cost of crime, poverty, misery, madness, loss of time and working ability. The facts show a greater financial profit on the side of total abstinence. As stated before, these laws have been quite generally in force in the United States for more than ten years. When the last census of the United States was taken, the brewers and saloon keepers were bemoaning their diminution of profits; but estimates of careful statisticians show that there has been in the country at large a gain of wealth during the ten preceding years of from \$25,000,000,000 to \$29,000,000,000.

An industry whose products injure, as alcohol does, the mental, moral and physical ability of the people, in proportion to the amount taken, can never be anything but a source of loss to a nation. The victories of the future in all fields will be with the total abstaining nations. The people who cling to the beverage use of alcohol in any form are clinging to a force that in the nature of things will make them a decadent people. The hearthstone is the cornerstone of any nation. Alcohol blunts the tender affections that make the home the dear refuge of civilized beings. The unspeakable woes inflicted by alcohol upon helpless children in the home cry to heaven for prevention.

At your request, and with letters from the Department of State of the United States government, I have come 3,000 miles across the ocean for this hour.

In presenting the greeting of the republic which has most fraternal relations not only with Germany, the nation which is our host, but with all the nations here represented, I bear also the official good wishes of the Department of State of the United States for all manner of success to this Congress.

In doing so, may I trust that you will not consider it intrusive if I venture to hope that this may be a time of decision for many nations?

This Congress, I am informed, is to pass no resolutions, but there is no statute in force to prevent any individual from personally resolving, here and now, that he will on his return use his utmost endeavor to secure for the children of all the people of his country the blessings of scientific temperance education. All great movements have had their initiative in the conscience of some individual who has read on the pages of history the blazing words:

Whatever needs to be done for human progress can be done, if there is the faith and courage to undertake and untiringly push it.

"Wisdom is in knowing what to do, virtue is in doing it."

It is the testimony of modern science that, by a law of nature as fixed as gravitation, alcohol has the power when taken even in small quantities, with any degree of continuity, to create an uncontrollable and destructive appetite for more. Hence, a moderate use of wine, beer, or cider will tend to the immoderate and uncontrollable use of more and more; in other words, to the slavery of alcohol.

If the nation is to be saved from this curse of alcoholism, its schools must teach:

1. The nature of alcohol, the power of a little to create an uncontrollable appetite for more, and therefore the danger of beginning to drink, even moderately; and the effects of alcohol, as shown by modern science, upon the various organs of the human body, especially upon the brain and nervous system, and therefore upon character and ability.

2. The reasons for obeying other laws of health with physiology enough to make these laws intelligible, because unhygienic habits often cause the drink craving.

This study must begin with the first years of school, and continue as a progressive branch with a larger development each year, with a place in the course of study for thirty or forty lessons per year until the subject is covered; the object being to guide in the formation of right habits.

There must be text-books or manuals of instruction for pupils' use, graded to their progressive capacities.

The lack of preparation of teachers in this comparatively new science makes the preparation and use of good, well graded text-books for pupils of the highest importance.

When the above conditions have been secured and are maintained in a country which has a good public school system, instrumentalities have been set in motion that will revolutionize the drink habits of that nation.

A letter dated a month ago from Leipzig, received by the speaker in Boston, contains this statement:

"I hear, sounding through all disputations, 'we have no school text-books for scientific temperance education in the German language.'"

Does not that lamentation set forth the need of other nations represented in this presence? Why may not the supplying of that need begin from this hour? The future is beckoning us to be men and women of action in this matter. The world's need is supreme. Posterity can now see that, because it was out of harmony with the advancing age, the fall of human chattel slavery was impending from the first.

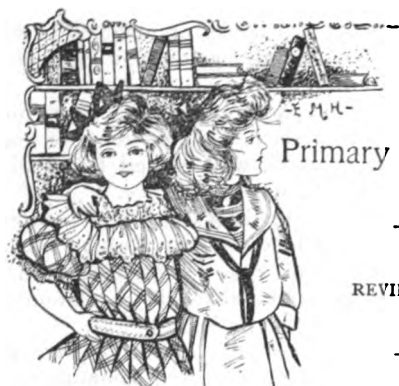
The fall of alcohol as a beverage is foredoomed by the discoveries of modern science showing it to be an enslaving

poison to human tissues. How soon will it fall? That depends upon your loyalty and mine to the duty of the present hour, to which I am sure we shall all respond. If we do, with listening ears we may hear the advancing steps of a young host from all nations, who will, ere many decades, come up to this Congress to celebrate the freedom of our race from the alcohol slavery.

An Address delivered before the Ninth International Anti-Alcohol Congress held in Bremen, Germany, April 14-19, 1903, by MRS. MARY H. HUNT, World and National Superintendent of the Department of Scientific Temperance, Instruction of the Woman's Christian Temperance Union; Life Director National Educational Association; Member American Association for the Advancement of Science.



On the Weser River, near Bremen, Germany



Primary Lessons

REVIEW WORK

THE CHILD IN VACATION

ONLY a few years ago the by-products of an industry were considered a nuisance and every effort was made to get rid of them. But gradually it was discovered that such refuse could be purified and made into a long line of useful articles which in many cases determined the entire profits of the business.

In similar fashion, nothing of educational value was formerly looked for from the vacation season. It was even taken as a matter of course that the child would lose a good part of what he had acquired during the ten months of the school year.

But in this respect also the world has grown wiser, and through the play schools which are rapidly spreading over the country, it has already been shown that, instead of being wasted, the vacation season can be utilized with happiest results. In keeping with this new idea, plan the closing lessons of the year in physiology and hygiene with the summer vacation especially in mind. The children already know that if they are to enjoy any kind of game or play, or be able to do work of any sort, they must have strong, active bodies. They have learned also that they are building every day the bodies they are to have when they are grown up. What kind of building material are they going to put into these bodies after school is out, and there is no teacher to remind them if they forget or make mistakes?

Review the work of the year from this viewpoint, making sure that each child can put to practical use what he has learned about food and drink, sleep, work, play, and the best ways of standing, walking, and sitting. If he has also gained a clear idea of the reasons why he must let cigarettes alone, as well as every kind of drink which has even a little alcohol in it, he will be forewarned concerning some at least of the dangers he is sure to meet, and thus forearmed against them.

FIRST YEAR

Why does every boy and girl need to play?

What game that you like gives good exercise to the arms? to the legs? to some part of the head? to the body?

Name kinds of work in which we use one or more of these parts.

Show how to sit properly; to stand; walk; run.

How do we get rested from work and play?

Why should children go to bed early?

Name foods that will make one grow.

What is the best drink for everybody?

Why are wine, beer, and cider bad drinks?

What have you seen today that you would like to remember?

How do we know when a person is speaking to us if we can not see him?

Tell three other ways in which we can find out things.

AUTHORITATIVE QUOTATIONS

At first it is a matter of will to drink or not to drink; but alcohol in the system has some influence over the physiological functions of the body, which sooner or later becomes stronger than the will, and then a pathological condition commences which to all intents and purposes fastens a disease upon the drinker that requires more than the will, and in many cases, more than time and total abstinence to eradicate.—N. S. DAVIS, M. D., Chicago.

The taste [for alcohol] once established takes care of itself.—DAVID STARR JORDAN in *Popular Science Monthly*.

Whether a person drinks beverages containing four or forty per cent alcohol does not matter, for if he drinks the former he will probably take ten times as much as if he took the latter.—J. PETERSEN, editor of *Die Enthalttsamkeit*.

The disastrous effects from the use of alcoholic drinks and tobacco upon sight are well known, producing gradual loss of vision unless their use is discontinued.—A. D. McCONACHIE, M. D., in *Dietetic and Hygienic Gazette*.

Alcohol tells us at once that it is bad for us; yet we manage so to dress it up with flavoring matters and dilute it with water that we overlook the fiery character of the spirit itself. But that alcohol is in itself a bad thing has been so demonstrated in the history of mankind that it hardly needs any further proof. Taste tells us that it has no place in our systems.—M. L. HOLBROOK, M. D., in *Health*.

SECOND YEAR

What are some of the things that we need every day?

Why should we breathe through the nose instead of the mouth?

Why do we need pure air in every room of the house?

What are some of the best kinds of food?

Why is it not a good thing to eat between meals?

What should we do at night with the clothes that have been worn during the day?

Name the parts of the body. Why is it made up of different parts instead of being in one piece? What are some of the things that each part does for us?

How can one have a well, strong body?

How can cigarettes hurt a boy?

If a boy gets in the habit of drinking cider why will he be likely to want stronger drink when he is a man?

AUTHORITATIVE QUOTATIONS

Alcohol is no more a "food" than is morphine, cocaine or any other narcotic poison. — EVAN O'NEILL KANE, M. D., in *American Medicine*.

Even the home-made wines are often stronger with alcohol than the imported, depending upon the amount of sugar added to the fruit. That made from raisins is even stronger than port, and elder wine is as strong with alcohol as cider or the strongest malt liquors; hence, home-made wines are far from being the innocent, harmless beverages some of our mothers were apt to think when they told us there was nothing in them to hurt any one, as they knew they had put nothing in the wine but the juice of the fruit and the sugar to sweeten the juice. — WILLIAM HARGREAVES M. D., in *Alcohol and Science*.

The habitual use of fermented liquors, to an extent far short of what is necessary to produce intoxication, injures the body and diminishes

the mental power. The drinker is not conscious of this loss, but those who know him best are painfully aware that his perceptions are less keen, his judgments less sound, his temper less serene, his spiritual vision less clear, because he tarries every day a little too long at the wine. — *Medical Pioneer*.

In the old vine-growing and wine-drinking countries of France and Italy the consumption of proof or distilled spirits has not only increased faster than the increase of the population, but it has brought these nations to the head of the list of consumers of alcohol in Christendom. Could there be any more conclusive proof of the fallacy that cheap native wines and beer promote temperance by supplanting the use of distilled spirits? — *Bulletin American Medical Temperance Association*.



"O joy to be out in June, to be out alert and free!
For life is a precious boon with the world in harmony."

beer. — *London Lancet*.

Through the brewing of beer, nutritive substances are spoiled and living made expensive. Therefore, in order to secure for the people better, cheaper food, the use of beer must be energetically fought against. — N. BLOCHER, editor *International Monthly*.

Milk is a food thirty times as reasonable, and meat is from ten to fifteen times as reasonable as the best beer. — H. PETTENKOFER, in *International Monthly*.

It has been truly said that alcoholic beverages are the only ones on God's footstool which have no power of self limitation. The more this liquid-absorbing ingredient is swallowed, the dryer one literally becomes. — M. A. GILLETTE, M. D.

Most drunkards commence on beer and wine and finally drink the stronger beverages. — L. D. MASON, M. D., in *Medical Pioneer*.

The moral aspects of beer-drinking may be studied in the proceedings of coroners' courts and police-courts where death and crime and brutality are often associated with excesses in

THIRD YEAR

Name three foods that are made from grains.

Why does the body need such food?

If beer is made from grain, why is it not just as good for a boy as oatmeal is?

How can beer hurt the one who drinks it?

Name the part of the body with which one thinks; moves; the parts with which one breathes; speaks; stands upright.

How should we take care of the outside of the body?

Why does every one need a strong, healthy body? What can one do to get it? What are some of the things that one must not do?

How does it hurt a boy to smoke cigarettes?

Why is it hard for a cigarette smoker to learn his lessons?

What other bad habits do cigarette smokers often have?

AUTHORITATIVE QUOTATIONS

Alcohol used continuously retards growth, diminishes vitality, and prevents development. T. D. CROTHERS, M. D.

The German authorities at Bonn had an investigation upon alcoholism among pupils in the primary school which showed a startling state of affairs. Out of one hundred children, sixteen did not drink milk and absolutely refused to drink it because it had no savour. Of two hundred and thirty-seven pupils, seven to eight years of age, there was not one who had not drunk wine, beer or whiskey. As a result of these investigations it was proved that the children most accustomed to alcohol showed the least intelligence; children who had their morning glass of whiskey and found no savour in milk showed it by great inattention during the morning hours.—*Philadelphia Medical Journal*.

About the time [in the child's life] when the most strenuous mental application is begun and when the opportunities for outdoor recreation are decidedly curtailed, the tobacco habit is usually begun if at all. As a machine that is obstructed to a certain extent can nevertheless apply a part of its energy to the sweeping away of the obstruction, so the organic machine can divert a certain amount of its energy to the elimination of this poisonous element, but only the residuum is available for normal processes of growth and functional activity.—J. W. SEAV-ER, M. D.

If oxygen is used to burn up alcohol, some tissues which ought to be removed from the

system will fail to be so removed, for want of that oxygen.—M. A. WILLARD, M. D.

Alcohol causes a greater activity of germ growth, and has a paralyzing effect upon the respiratory and cardiac nerves. Because of this action its deleterious effect upon pneumonia patients is well recognized.—E. O'NEILL KANE, M. D.

Alcoholism is the most terrible factor in the propagation of tuberculosis. The strongest man is powerless against it, if he drinks intoxicating liquors.—PROF. BROUARDEL, Academy of Medicine, Paris.

Alcohol causes a depressant effect on the depth of the respirations and the amount of air passing through the lungs.—DAVID CERNA, M. D.

The use of a social poison is in itself an abuse. Hardly any drunkard wishes to be or to become such. Imperceptibly and unconsciously he is led into it by the weakness of his own brain and the example of others. Every glass lessens his power of reasoning and resistance.—A. FOREL, M. D., Zürich.

Commonly, alcohol attacks the weakest point of the organism, and at its weakest time, whether the weakness be due to heredity, critical points of life, overexertion, injury, or disease. Thus a man may have stood a moderate amount of alcohol well and had no uncontrollable craving for it till he has a severe attack of influenza; yet after that he may become a drunkard and rapidly develop alcoholism.—A. E. T. LONG-HURST, M. D.

THE HOUR OF JUNE

When the clover is deep in the orchard,
And the grass waves fresh and free;
When the strawberry sweet, in sunny retreat,
Waits for the robin or me;

When the bobolink down in the meadow
Is singing his rollicking song;
When skies are blue and clouds are few,
And the days are happy and long;

When the butterfly woos the white rose,
And everything seems in tune,
Oh, then you may hear the clock of the year
Striking the hour of June.

—*Boston Transcript*.

School Physiology Journal

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HENRIETTA AMELIA MIRICK, Assistant Editor

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Cease, cease to *think* and be content to *be* ;
Swing safe at anchor in fair nature's bay;
Reason no more, but o'er thy quiet soul
Let God's sweet teachings ripple their soft way.

Cease not such hours an idle waste of time,
Land that lies fallow gains a quiet power;
It treasures from the brooding of God's wings
Strength to unfold the future tree and flower.

—HARRIET BEECHER STOWE.

AFTERMATH OF THE NINTH INTERNATIONAL ANTI-ALCOHOL CONGRESS

IN the early part of the nineteenth century the King of Prussia and the Emperor of Austria, at an international meeting of two, entered into an alliance, afterwards joined by the King of England, for the overthrow of Napoleon, the menace and terror of all Europe. Tradition says they sealed that compact at midnight over the sarcophagus of Frederick the Great, in a vault under the pulpit of the Church of the Garrison at Potsdam. Although one year later Napoleon scratched an "N" in the dust upon the same tomb, his overthrow was foredoomed. As Hugo says, "The great man had to go, that the great age might come."

A few hours' ride by rail from that spot, another international meeting, but of larger numbers, has just been held in Bremen, the Ninth International Anti-Alcohol Congress, which met to consider how the greatest menace of the twentieth century, alcoholism, can be overthrown.

Indications point to this Bremen Congress as a factor destined to be as influential in the future history of Europe as was the compact against Napoleon made in the Church of the Garrison, nearly one hundred years ago. An idea often expressed at this Congress was that what Germany and other European nations have now most to fear is not so much armed forces from without as the waste of the physical, mental and moral fiber of the people through

alcoholism. The fact that this conclusion has been derived from the experimental investigations, by men of science in Germany and other European countries, which show that it is the nature of alcohol to demoralize the drinker, counts for much in the pending effort for greater sobriety in these countries.

The difficulty in Germany, and practically throughout Europe, seems to be a lack of the widest possible application to popular needs of the knowledge thus secured. The Good Templars and German Woman's Abstinence Society to a limited extent have disseminated these findings of science, which otherwise have been filed away on the shelves of scientific libraries; while we in the United States have put them into popular language in the school text-books on physiology and hygiene which are being studied by the twenty-two million children in our public schools.

There are many evidences that the interest shown is not merely ephemeral. A prominent man in Berlin said to the writer this morning:

"We are coming to see the relation of drink to the future. Without instruction in our schools as to the reasons for abstinence, Germany can never compete successfully in commerce nor in other respects with the United States with its great system of public school temperance education that is making that country the most abstinent of the nations and therefore the most profitable producer."

The Prussian Minister of Education has already issued an order recommending all teachers to teach temperance, but without any requirement of systematic study of the subject as a part of physiology and hygiene, or of manuals of instruction. Hence little or nothing is done. In fact, there is not a school text-book in temperance physiology in the German language,—a need as great if not greater than that of the strong navy to which the Emperor has so promptly responded. A person in a position to know said to the writer today that His Majesty, the Emperor, is deeply concerned about the widespread drinking by the people and the great number of public houses, or drinking saloons. The same high authority said with great earnestness, "The drinking in the universities of Germany is most alarming. Members of students' societies are obliged by the requirements of their organizations to drink an incredible amount of beer, to their own great injury." A relative of the late Chancellor's family quoted to me yesterday a saying of Bismark's that "A reformation of the drinking habits of the people would settle all the other social problems of Germany."

(Continued on third page of cover)



PREPARATION FOR WORK

ONE of the conditions imposed upon every candidate for the Cecil Rhodes' fellowships which admit two students yearly from every state and territory in the United States to the University of Oxford, is that he must rank as high in morals as in physical and mental development. Character counts as much as learning and athletics together.

The same two-fold standard is in force in every successful business, and the youth who expects to make his own living must be trained to meet it. Many will leave even the lower grades of the grammar school with the close of this spring term, to begin some kind of work. If they are to succeed, it will be because of what each one is as well as what he can do.

All work in physiology and hygiene should tend directly to the formation of right personal habits in the child. In so far as it does this, it is a success; wherein it fails, it too has come short of the mark. As the closing days of the school year are upon us, it is time to take account of stock and reckon results. Are the pupils in each grade more thoughtful in matters of the toilet, such as the care of their teeth, hair and nails? Do the lunch baskets show that what the child has learned about foods is being practised at home? Are all in the class increasing normally in size, height, and weight? Do they stand erect and breathe properly? Are they entirely free from the cigarette habit, and do you know that they would refuse a glass of beer or cider if it were offered them?

The teacher who can answer "Yes" to each of these questions may rest assured that she is on the right track, and that the habits her pupils are thus forming will help them to realize their hopes and plans in the world of work.

FOURTH YEAR

Why must all parts of the body be kept clean?

When is the best time to take a full bath?

What parts of the body hold it in shape?

What is the use of the joints?

Why is it more important for children always to sit and stand well, than for grown people?

Why is the boy who smokes cigarettes often shorter and smaller than one who does not?

Why is wine not just as good to drink as grapes are to eat?

What becomes of the food that we eat?

What kinds of food are needed by the body?

Why do those who take alcoholic drinks suffer more both from the cold and heat than others?

How can we train our senses? How should one take care of his eyes?

AUTHORITATIVE QUOTATIONS

If a quarter of a liter of beer a day is sufficient notably to retard our perception of impressions on our senses and to last twenty-four hours, certainly three glasses of beer a day must be regarded as an abuse leading sooner or later to serious impairment of health.—*Bulletin American Medical Temperance Association.*

Any child can see that it would be absurd to say that any particular kind of mistake he has made, for instance, eating too fast, or any particular unsanitary condition or custom, such as bad ventilation of the bed-room, is proved to be harmless by the fact that some people have lived to be old who have done or suffered these things. Old people are to be found in all our slums among the great unwashed. Nevertheless, good habits and cleanliness are conducive to health and long life. So the mere fact that people have been accustomed to take a little alcohol proves nothing. It is because the human body is more or less capable of resisting the evil effects of noxious things and these people have exceptional powers of that kind.—*Medical Temperance Review.*

Roberts has shown that beer and wine destroy starch digestion in the stomach.—J. W. GROSVENOR, M. D. in *Journal of Inebriety.*

Various disturbances of the digestive organs are found not infrequently among children consequent upon the use of alcohol; but it is still more common to find slight digestive troubles noticeably increased by giving children alcohol to cure them.—DR. AD. FRICK, Zürich.

Perfect health can not be enjoyed with even a moderate use [of alcohol], while it is certain that the highest possible health may be enjoyed without its use. WILLIAM PEPPER, M. D., in *Journal of Hygiene.*

In France, the difference between the students in the polytechnic schools who smoked

cigarettes and those who did not, in scholarship, as shown by their respective class standings, was so great that the Government prohibited absolutely the use of tobacco in all government schools.—E. STUVER, M. D., *Journal American Medical Association*.

Habitual cigarette smokers are barred from positions in the operating department of the New York, New Haven and Hartford railroad. H. A. Ives, who has charge of the examinations, says:

"In signals, the green stands for safety and the red for danger, and confusion of these colors has caused many accidents. This test is also a sure indication of whether a man is a cigarette smoker or not.

"If an applicant is a habitual cigarette smoker, he is almost sure to be more or less color-blind."—*Journal of Inebriety*.

It is in the hours of idleness that smoking is indulged in, and in proportion as it is indulged in the craving for it grows.—R. MARTIN in *London Lancet*.

The material of the cigarette is often refuse tobacco from old cigar stumps, and moistened by the maker's tongue which may be syphilitic. The prepared cigarette is too vile for defense.—*Journal American Medical Association*.

The whole nervous system is affected to some extent by even moderate doses of nicotine.—J. E. SEEVER, M. D., in *Journal of Inebriety*.

FIFTH OR SIXTH YEAR

What does the body need in order to make it grow?

How is the waste of the body from work or play made good?

What are some of the things that hinder growth and repair, and that should be avoided for this reason?

Explain one good way of ventilating a room?

Why is thorough ventilation necessary to health?

How does the oxygen that is breathed get to the blood? What changes does it produce in the body?

Why is the total abstainer less likely to die from pneumonia or tuberculosis than the moderate drinker?

How does cigarette smoking often affect the nerves of the hand? of the eye? How does it affect a boy's brain? To what other bad habits does it often lead?

AUTHORITATIVE QUOTATIONS

Without doubt the protoplasmic nerve cells of the organs of special sense are as sensibly affected by alcohol as the cells of any other tissues of the body.—*Bulletin American Medical Temperance Association*.



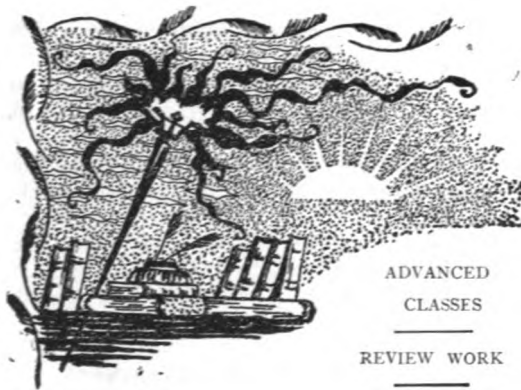
"Once again the streets are gay as a gypsy's holiday;
Once again has life begun, fresh and fair beneath the sun.
Vacation's come!"

Alcohol, tobacco, or whatever other drug may be regarded as a toxic agent, or else the toxin that it liberates in the system, may sometimes, and, probably, usually, affect primarily the fibers of the optic nerve.—*Journal of Inebriety*.

Defective color sense may possibly be a product of civilization, and the use of tobacco a factor in it.—*London Lancet*.

Wines, in even a small proportion, almost paralyze saliva, and thus have a highly inhibitory effect on gastric digestion. Beer and ale act in the same manner, retarding gastric digestion, especially of bread or farinaceous food.—CHAS. H. SHEPARD, M. D., in *Journal of Hygiene*.

As far as alcohol is an irritant it provokes an increase in the secretion of the gastric juice; but this secretion is abnormal and does not possess the properties of the gastric juice.—DR. DE VAUCLEROY, Prof. of Hygiene in Belgium Military School.



OPPORTUNITIES OF TODAY

NOT long ago a millionaire was refused accommodations at the most exclusive and desirable hotel in London because of his profanity during a previous visit.

This is but one of many indications that success in life is increasingly dependent upon one's personal habits. While opportunities of all kinds were never so frequent as now, competition too has increased so rapidly as to shut out the unfit and unworthy from all hope of advancement.

"No one is born into the world whose work is not born with him," something which he can do better than any one else if he will, but only by developing his possibilities to the utmost. Other things being equal, the profane man has no chance in comparison with the reverent, the vicious in comparison with the pure, the cigarette fiend or the moderate drinker in comparison with the total abstainer. In every business it is the sound man or woman that is wanted, rather than one whose life is specked or marred by even minor vices.

This thought may well be chosen for special emphasis in reviewing the work of the year in temperance physiology with advanced classes.

Get a good definition of health, in the first place.

Then sum up its necessary conditions, or as many such as time allows, for instance

Cleanliness of the person and every part of the home; the proper disposal of garbage and other kinds of waste matter; the need of ventilation, and some of the most practicable ways of ventilating houses and public buildings.

Find also in what ways each person is responsible for his own health, in respect to what he eats and drinks; in the kind of clothing he wears and in the way it is made; in matters of exercise; in the time given to sleep; in the way one breathes, and in the kind of air he takes into his lungs.

Above all, show that even moderate use of

tobacco or any alcoholic beverage is likely to be inconsistent with perfect health; first, because each leaves its scar, however slight; but especially, because in multitudes of cases the moderate use of any narcotic, in the very nature of things, leads directly to its immoderate use and thus to ruin.

AUTHORITATIVE QUOTATIONS

All narcotics by their paralyzing action on the sensitive nerve centers, poison, starve, and exhaust them, and thus destroy the power of the higher centers to recognize the actual condition and relation of their surroundings.—T. D. CROTHERS, M. D.

Prout, Smith, Harley and others proved conclusively that alcohol lessens the absorption of oxygen by the blood corpuscles and the exhalation of carbon dioxide.—*Journal American Medical Association*.

Most people believe that a glass of wine, a little caraway, liqueur or cognac is good after a heavy meal, because it furthers digestion. It is true that spirituous liquors excite the gastric mucous membrane so that it secretes more digestive fluid; but this action lasts but a short time and ultimately weakens the stomach. Larger quantities of alcohol hinder digestion or stop it wholly, as the following experiment shows:

Into each of five test-tubes, filled with 5 ccm. of distilled water, white-wine, red-wine, port-wine and cognac respectively, were poured 5 ccm. of artificially prepared gastric juice.

Then there was carefully placed in each test-tube a piece of the white of an egg the size of a pea, this being taken from a hen's egg which had been cooked four minutes. The apparatus was then warmed to 40°-50° C and kept at this temperature for over half an hour. The test-tubes were frequently shaken.

At the end of forty-five minutes, it was noted that in the glass containing only gastric juice and distilled water, the egg had completely disappeared; while in the other tubes, the more alcohol there was in the solution, the less the egg had changed. Indeed, in the tube containing cognac, the egg was still almost unchanged, and even after three days there was almost no perceptible loss.—A. BERGMANN, chemist, in *Die Enthaltsamkeit*.

Nicotine is one of the most violent poisons known to chemistry, and in doses sufficiently large its action is very similar to that of hydrocyanic acid.—G. W. CROOK, M. D.

It [tobacco] is the bane of the school, and

more boys break down in health and are sent home from its influence than from any other.—J. W. SEAVER, M. D.

That tobacco acts upon the protoplasmic activity is shown by its influence in retarding both the physical and the mental development of boys or youth in the higher schools of France and some of those of our own country. This effect in lessening the protoplasmic, or vital, activity in both vegetable and animal growth is so fully proved that all intelligent writers agree in prohibiting to the young the use of both alcohol and tobacco until maturity is reached.—N. S. DAVIS, M. D.

Tobacco makes its largest inroads on those who have not reached maturity. At every stage of life tobacco makes less instead of more of a man.—A. P. REED, M. D., in *Dietetic and Hygienic Gazette*.

Anæmia is a constant accompaniment of chronic nicotine poisoning. But this is due to the disastrous results of the poison upon the digestive system, which does not prepare abundant nutriment for the blood current, and the anæmia should therefore be referred to starvation.—*Journal of Inebriety*.

It is strange that wines have received such marked recognition as therapeutic agents, for experiments point to the fact that their power to inhibit digestion, salivary, gastric, and pancreatic, is out of all proportion to the amount of alcohol they contain.—HENRY MARTIN BRACHEN.

Even in small quantities, alcohol is not only useless but harmful.—H. BLOCHER, in *International Monthly*.

"How would you define 'exercise,' as distinguished from 'work'?" asked the teacher. "Exercise," answered Johnny, "is work you like to do, and work is exercise you don't like to do."—*A True Republic*.

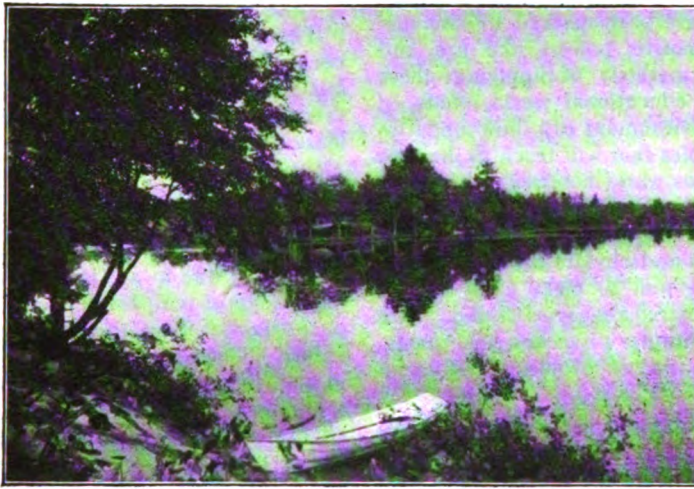
DICK'S FLOWER

The teacher asked, one soft spring day,
When slowly drag the study hours,
And healthy children long for play,
"My dears, what are your favorite flowers?"

Said Marion slowly, "I suppose
My favorite flower is the rose."
"Mine is the lily," answered Sue.
"I love," said Bess, "the violet blue."

"And I," laughed Jim, "the hollyhock."
But Dick replied, with roguish look,
Tossing aside his slate and book,
"Give me the four-o'clock."

MARY L. C. ROBINSON.



"Very hot and still the air was, very smooth the gliding river,
Motionless the sleeping shadows."

Conditions favorable or unfavorable to good character may be inherited; the thing itself, good character, cannot be inherited. It is a product, a beautiful fabric woven upon the looms of personal activity, constructed out of aspirations and prayers, visions of the ideal and high resolves,

dreams of a juster relation to men and a happier communion with God; it is these turned into solid reality and shining like cloth of gold through the continuous effort of the faithful and successful will.—REV. GEO. A. GORDON, D. D.

TEDDY'S QUERY

One brother was tall and slim,
The other chubby and short—
Teddy sat looking at them one night,
Apparently lost in thought.

"Mamma," he asked at length,
"Which would you like the best,—
For me to grow north and south, like Tom,
Or like Willie from east to west?"

A. F. CALDWELL.

BOOK NOTICES

THE PLACE OF INDUSTRIES IN ELEMENTARY EDUCATION, by Katherine Elizabeth Dopp. The University of Chicago Press, Chicago; P. S. King & Son, London, 1903.

A most intelligent and practical contribution to educational literature. The author, who bases her book upon several years of practical experience, as well as upon research work done under the guidance of men like Professor Dewey and Professor W. I. Thomas, aims to show that the changes wrought in the industrial world by the application of modern science to industrial processes should be paralleled by as remarkable an advance in education. Child development proceeds along paths beaten out by the race. Just as the science of ethnology makes it plain that the great steps in the evolution of industry have been marked by the discovery of new motive powers like fire and steam and new methods of applying these forces, so, in the educational world, study of the child in his environment will show underlying motive principles that will teach us how to utilize the enormous waste in current educational methods. The principles set forth in this book tend to unify the various branches of elementary education and obviate the drudgery of school work. They aim to make clear to the child that the industrial processes of today are the outgrowth of simpler processes, thus accustoming him to the idea of evolution and racial progress.

OFFICIAL REFERENCE LIBRARY OF UNITED STATES HISTORY, by General Marcus J. Wright, Government Statistician at Washington, John Clark Ridpath, I.L. D., Historian, James P. Boyd, A. M., I. B., J. W. Buel, Ph. D. Official Company, publishers. 1901 Edition. Two volumes.

This work supplies a need which has been felt by the ordinary student of United States history of an official issue, in concise form, of the facts and statistics of this country's development. The great ability of its compilers, as well as the fact that their statements are drawn from original sources, many of them practically inaccessible to the public before, makes the work authoritative. Six epochs are treated, the epochs of discovery, of planting, of independence, of nationality, of war, and greatness. Especially valuable sections are the *resume* of events of the last decade, the chapters upon the war of the Rebellion, and the war statistics given, particularly those in regard to the Southern Confederacy. The work is well bound in half calf and will be welcomed by students everywhere. It is particularly useful as a reference book for schools.

BOBOLINK CHIMES

A whirl of wings o'er clovered meadows,
The gleam of a harness and crown,
And low on the swaying maple
A bobolink settles down.

A chime as if from bells of silver
Over the clover soft doth float,
E'er yet the rapturous song-burst
Outpours from the feathered throat.

A whirl of wings, a gleam of yellow,
Faint-heard notes, and into the throng
Of clover heads gently nodding,
Drops softly the bird and song.

Journal of Education.

OBEDIENCE AND PUNISHMENT OF CHILDREN

There is no diversity of opinion as to the necessity of obedience, to a child's well-being, but in the methods whereby obedience is secured there is a wide difference in the practises, at least, of parents. In a paper in the June *Delinicator* Mrs. Theodore W. Birney gives some eminently sane advice on obedience and punishment. Mrs. Birney is not partial to the rod, and she holds that incorrigibility in children is more often due to a "lack of self-control and knowledge of temperament and child nature" in the parent than to any abnormality in the child. There is, doubtless, an element of truth in that, though some may disagree. However, there are other points in the article that many parents will do well to take to heart. The author shows a wide knowledge of the nature and needs of children.

Martha's Vineyard Summer Institute announces its twenty-sixth annual season, in a twenty-four page circular which will be sent on application to the President, William A. Mowry, Hyde Park, Mass. Complete courses in methods, academics, supervision, and oratory are offered, by an able corps of instructors. The unrivaled location of this oldest summer school for teachers in the United States, which combines the attractions of a favorite summer resort with the professional advantages which are naturally sought by the progressive teacher, insures a full attendance with each recurring season.

Readers of the JOURNAL will remember that the issue of this periodical is for the ten months of the school year only, from September to June inclusive. Accordingly, the next number to appear will be that of September. Renewals and new subscriptions should reach us on or before the middle of August to insure promptness in mailing.

CONTENTS OF VOLUME XII

SEPTEMBER 1902—JUNE 1903

AUTHORITATIVE QUOTATIONS

Alcohol :

A Factor in Disease, 74, 78, 143, 151, 152
 A Poison and Narcotic, 3, 15, 39, 74, 108, 126,
 143, 147, 152

Effects of, on

Cells and Tissues, 15, 26, 42, 78, 106, 125, 126
 Character and Morals, 15, 39, 106, 151
 Digestion and Assimilation, 42, 124, 125,
 140, 143, 154, 155, 156, 157

Growth and Health, 39, 42, 60, 103, 106, 126,
 150, 152, 154

Heart, Blood, and Circulation, 78, 124, 125,
 152

Mental Ability, 15, 39, 42, 103, 106, 151, 152

Muscles and Working Ability, 15, 103, 126

Nervous System, 15, 26, 103, 143, 156

Organs of the Body, 39, 78, 125, 126, 140, 143,
 151

Respiratory System, 74, 152, 156

Secretion and Excretion, 42, 74, 78, 140

Senses, 26, 27, 150, 154, 155

Teeth, 125

Food Value of, 126, 143, 151

In Beer, Wine, Cider, etc., 39, 106, 154

In Root Beer, Ginger Beer, etc., 39

Moderate Drinking, 15, 103, 103, 125

Seriousness of Wounds in Drinkers, 125

Value as a Medicine, 3

Alcoholic Appetite, 42, 74, 103, 150, 151, 152

Tobacco :

A Factor in Disease, 74, 78, 140, 154

A Poison, 74, 137, 156

Effects of, on

Brain, 15

Cells and Tissues, 140

Character and Morals, 78, 137, 157

Digestion, 74, 125, 137, 140

Growth and Health, 42, 43, 60, 78, 125, 137,
 157

Heart, 74, 137

Mental Ability, 74, 137, 155

Nervous System, 15, 74, 78, 155

Nutrition, 43, 60, 157

Organs of the Body, 74, 78, 140, 157

Respiratory System, 74, 78, 140

Special Senses, 27, 137, 155

Nicotine in Tobacco, 136

BOOK NOTICES

Alcohol as a Medicine : Allen, 112

Arithmetic by Grades : Prince, 64

Delineator, 45, 112, 158

Industries in Elementary Education, The
 Place of, 158

Little Chronicle, The, 56

Morphinism and Narcomanias from Other
 Drugs : Crothers, 64

Plants and their Children : Dana, 128

Qualitative Analysis : Dennis, 48

Short Stories of Our Shy Neighbors : Kelly, 128

Snow Baby, The : Peary, 80

Standard First Reader, A : Funk, Moses, 48

Story of a Living Temple, The : Rossiter, 48

Success, 45, 90

Ten Common Trees : Stokes, 128

United States History, Official Reference
 Library of, 158

EDITORIALS

Education Does Educate, 141

Glimpse of the Scientific Temperance Head-
 quarters, A, 44

Interesting Report, An, 23

Massachusetts Committee of Twelve, The, 11

Ninth International Anti-Alcohol Congress,
 Aftermath of the, 153

Our Debt to Honest Science, 75

Real Issue, The, 57

September Greetings, 11

Temperance Education Laws, Some
 Untenable Criticisms on the, 92, 107

Why Have Text-Books, 119

ILLUSTRATIONS

Bremen, Just Outside of : Photograph, 149

Brittany Sheep : Bonheur, 29

Cherub : Mengs, 93

Choir Boys : Photograph, 63

Church in Sulgrave : J. V., 83

Circe and the Friends of Ulysses : Rivière, 105

Composition Lesson, The : von Bremen, 47

Country Road, A : H. A. M., 19

Dorothea : Dresser, 151

Drink-Consumption, Comparative Table of :
 Irving, 131

Falls at Lodore, The : Photograph, 73

Feeding her Birds : Millet, 27

Flag, The, 65

Glacier des Bossons : Photograph, 99

Glen Lyon, the Pass : Photograph, 111

Gloxinia : Photograph, 115

Guardian Angel : Plockhorst, 139

Harvest Time : L'Hermitte, 45

I'm for Temperance : Photograph, 39

Kittens at Play : Ronner, 5

Lake in Franklin Park, Boston : H. A. M., 10

Lake Scene : McD., 157

Little Ahnighito : Stokes, 71

Little Red Schoolhouse, The : H. A. M., 15

Little Victor, A : Photograph, 55

Mt. Hood : Photograph, 35

Mt. Snowdon : Photograph, 79

Moving Day : Lengo, 117

Nativity : Schönherr, 51

Oversleeping : Gebler, 89

Pets, The : Knaus, 121

Primary School in Brittany : Geoffroy, 6

Rathaus in Bremen : Photograph, 147

Rest in Egypt : Le Rolle, 61

Richard : Photograph, 87

Scotch Lane in Winter : Photograph, 67

Sir Galahad : Watts, 93

Sleep of Infant Jesus : Margotte, 59

Song without Words : Lins, 155

Springtime : Daubigny, 143

St. Michael : Raphael, 43

Stephen and Rachel : Photograph, 69

Swallows on Telegraph Wire : Laux, 127

Temperance Education Map : Hunt, 133

Three of Them : Salentin, 135

Toll Paid Here : von Bremen, 103

Tug of War : Morgan, 125

Under the Syringas : Whittemore, 21

Village Barber, The : Gysis, 8

Waite's River : McD., 31

Water Babies : Dvörak, 137

Watering-trough, At the : Dagnan-Bouveret, 109

LEADING ARTICLES

Birds Eye View of Temperance Education in
 Schools of Different Countries, A : K. Her-
 cod, 17

Demonstration Evening at Portland, 65

How Can We Best Combat the Alcohol Evil : Madden,	49	Fairy Draughtsman, A : Leonard,	33
Preventive of Alcoholism, A,	129, 145	Fashioner of Spring, The : Round the Year in Myth and Song,	100
Question of Public Good, A,	1	Freedom : Markham,	84
Relation of Scientific Temperance to Popular Needs, The,	97, 113	Future, The : Edgerton,	81
Scientific Temperance in the United States,	33	Indian Summer : Bumstead,	45
Two Factors in the Making of an American,	81	Jack Frost : Lotherington,	71
		June, The Hour of: Boston Transcript,	152

MISCELLANEOUS

Advent of Joel, The : Irving,	62	Little Scholar's Choice, The : Independent,	67
Anti-Alcoholism in France : H. A. M.,	143	Little Wild Flowers, The : Challis,	43
Attitude of Physicians, The : H. A. M.,	3	Lyric, The First: Bashford,	61
Bremen Congress, The : H. A. M.,	144	Maple Tree, The : Hayne,	160
Cash Prizes : Allen,	76	November : Strong,	45
Childhood, Fear, Anxiety, and Grief : The Delineator,	112	October : Jackson,	44
Danger in Beginning to Drink, The : Thurn- wald,	103	October's Gifts : Sherman,	23
Destroyer of Men, A : Carnegie,	96	Oriole's Christmas Stocking, The,	24
Dewey's Lesson : Success,	137	Resolve,	64
Dream Which Comes True, A : National Ad- vocate,	45	Rose Garden : Ewing,	79
Drunkards a Year, 177 : M. H. H.,	110	Sheaf of Grain, A,	45
Experience Corner : C. F. S.,	46	Song of Waking, A : Bates,	39
Food and Poison : Kassowitz,	126	Teddy's Query : Caldwell,	137
Foreign Railroads and the Alcohol Question : C. F. S.,	61	Telltales,	157
Good Investment, A : Shaw,	96	Valentine, A : Richards,	112
Half a Pint of Beer : Ridge,	103	Waits, The : Deland,	95
Locoed Horse, The : Merrill,	13	Where Fields Lie White : Peck,	49
Lunches for School Children : Lemcke,	29	Which General : Hamilton,	74
Martha's Vineyard Summer Institute,	158	Why : Field,	90
Methods of Teaching Scientific Temperance : Fall,	79		52
Mistaken Criticism : Irving,	144		
Next Step in Human Progress, The : M. H. H.,	122		
One Boy in Ten to Become a Drunkard : M. H. H.,	80		
Plea for the Birds, A : Hoar,	127		
Requisites in Making out a Course of Study : M. H. H.,	111		
Resolutions : Crothers,	128		
Schedule of Suggested Topics for 1902-1903 : H. A. M.,	16		
Scientific Temperance in New York : N. Y. S. Central Committee,	30		
Selection of Foods : Baltimore Health Journal,	29		
Sight, How Injured : Journal of Hygiene,	56		
Story of Abstinence in Vienna, The :	32		
Temperance Instruction in the United States : Harris,	94		
Woman's Christian Temperance Union and Education, The : M. H. H.,	36		
Worth of a Boy, The : Schaeffer,	95		

POEMS

April Magic : Sherman,	113
Autumn : Painter,	24
Autumn's Banner : A. S.,	17
Bobolink Chimes: Journal of Education,	158
Bright World, In the : Stanton,	48
Clover Message, A : Higginson,	120
Daisies, The : Sherman,	140
Dawn of Autumn, The : Crockett,	1
Dick's Flower: Robinson,	157
Down to Sleep : Jackson,	43
Easter Awakening : Sangster,	123
Easter Garland, An : Scollard,	97
Easter Promises : Banks,	126

SUGGESTED LESSONS	
Advanced	
High School :	
Assimilation,	124
Controlling System of the Body, The,	14
Excretion,	77
Organs of the Body,	142
Self Reliance,	91
Seventh or Eighth Year :	
Opportunities of Today,	156
Organs of Secretion, The,	138
Organs of Special Sense, The,	25
Intermediate	
Fifth or Sixth Year :	
Alcoholic Drinks,	104
Growth and Repair,	40
Organs of Breathing, The,	72
Punctuality,	88
Fourth Year :	
Covering of the Body, The,	7
Framework of the Body, The,	58
Preparation for Work,	154
Two Lessons on Cleanliness,	120
Primary	
First Year :	
Drinking,	101
Eating,	21
Five Senses, The,	53
Position,	5
Playing,	4
Sleeping,	20
Second Year :	
Kindness,	85
Parts of the Body,	116
Needs of the Body, Some,	68
Third Year :	
Cigarettes,	134
Grain and Beer,	7
Ungraded Classes :	
Physiology in Rural Schools,	28
Reviews	
Child in Vacation, The,	150

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(Continued from page 153)

While members of the higher classes here and there are being roused by the testimony of science to a sense of the danger from drink, the Social Democrats are saying, as they did most vehemently in the last session of the Reichstag just closed, "It is poverty that makes the people drink." Others in their ranks, seeing that only through abstinence can the working classes rise, are organizing against alcohol. "Abstinence education" is their watchword.

In the midst of all this an election is pending in which the Social Democrats, constantly increasing in numbers, are destined to play an important part.

The fourteen hundred delegates to the Bremen Congress have gone home to the fifteen different nations from which they came with renewed enthusiasm and encouragement in their battle against alcohol. One rarely sees such a body of great men and women as were these, great in attainment, in rank, and in service. The results of their deliberations are sure to be written on the pages of that future of Europe which, following universal scientific temperance education in the schools, will find alcoholism remembered only as a dark page in the history of the past.

—M. H. H., LETTER FROM GERMANY.

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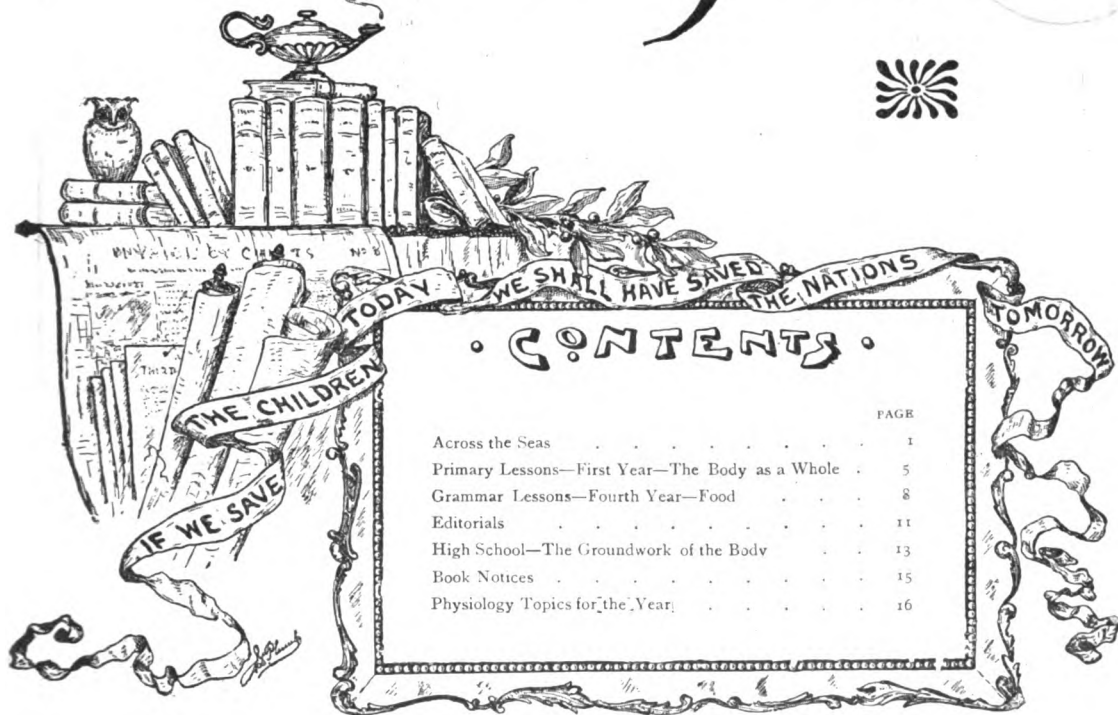
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THE SCHOOL PHYSIOLOGY JOURNAL



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MARY H. HUNT, EDITOR

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SEPTEMBER, 1903

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Vol. XIII

BOSTON, SEPTEMBER, 1903

No. 1

LABOR AND LIFE

LEARN to labor and find it sweet,
Learn to get the good red gold
That veined hides in the granite fold
Under our feet—
The good red gold that is bought and sold,
Raiment to man, and house and meat!

But learn, when delving, to lift the eye
To the far off mountains of amethyst,
The rounded hills, and the intertwist
Of waters that lie
Calm in the valleys, or that white mist
Sailing across a soundless sky.

—JAMES HERBERT MORSE.

ACROSS THE SEAS

AN AUDIENCE WITH THE GERMAN EMPRESS

THE civilized nations are looking anxiously for something that promises relief from the perils of alcoholism. Recognizing that prevention through education is the true solution of the problem, nearly all are turning to the school as the best instrumentality for teaching the people the nature and effects of alcoholic drinks, because the school reaches the largest numbers and at the most impressionable period of life.

Our German friends wished to hear about this education in the United States at the International Anti-Alcohol Congress held in Bremen last April. Accordingly, as is already known, the officers of that Congress asked President Roosevelt that the United States be represented there and, if possible, by the writer. Although, owing to some technicality in the form of invitation, our government was unable to appoint a delegate as such, yet, through the kindness of our Secretary of State, the courtesies of the Congress were bespoken for me by the German Ambassador in Washington and the United States Ambassador in Berlin, and, in addition, the Secretary of State sent me a letter of introduction addressed to the diplomatic and consular officers of the United States requesting such services as they could extend in connection with my mission in Europe.

Upon the return of the writer, it seemed proper that grateful acknowledgements should first be made to the President and the Secretary of State, in view of the important practical results of their kindness which it is hoped will be

helpful in promoting international reform. The following facts are in substance those which have thus been laid before the President and Secretary Hay:

THE BREMEN INTERNATIONAL ANTI-ALCOHOL CONGRESS

German scientists have made the world their debtor for their exact experimentations which show the character and effects of alcoholic beverages, but the results of these findings of science have not in that country, to any great extent, been made matters of universal popular knowledge.

In the United States, first of all nations, laws have been enacted making instruction in this subject as a part of the laws of health compulsory for all pupils in the public schools of the nation. The facts concerning the nature and effects of alcoholic drinks have been put into simple language in text-books adapted to the progressive grades of public schools. Our most effective laws specify that there shall be at least thirty lessons per year, from the first primary to the end of the first year of the high school, making, for the nine years, two hundred and seventy lessons in all in the whole subject of physiology and hygiene, a due proportion of which is devoted to the effects of alcoholic drinks and other narcotics.

The fact that the Bremen Congress numbered nearly fifteen hundred members from fifteen different nations shows the interest in this question in countries usually considered prejudiced in favor of alcohol. Five days were given to the profound discussion of every phase of the subject, including especially experimental and other research on the physiological and sociological results following the beverage use of alcohol even in what is termed "moderate amounts." The papers and discussions of these topics were chiefly by men from the universities and other institutions of learning of Europe. The facts against the beverage use of alcoholic drinks, facts which, disputed by the lovers of and dealers in those drinks, we are teaching in the public schools of the United States, were abundantly confirmed.

A marked impression, which is already reported to have stimulated action in five different nations, was made by facts derived from the last census and other official data presented at the Congress by the writer. These facts show that this education has helped secure the increase of 4.1 years in the average length of life

in the decade preceding the last census, the greater sobriety of the American workman which is acknowledged to be one factor in the commercial success of the United States, and the decline in the rate of increase in the use of alcoholic drinks,—the returns of the Internal Revenue department showing that during the last eleven years, in which this study has been quite generally taught in the schools, the gain in their per capita consumption was only one-third as great as in the preceding eleven years when there was little or no study of the subject. That there was even this gain was largely due to the enormous influx of alcoholic drinkers, as immigrants, during this time.

Temperance education in the schools is already so much of a world movement that great interest attaches to the inquiry why such gratifying results are following this educational method of preventing alcoholism in one country and not in every other. Thus the question of what is taught and of methods is of live interest.

AN INTERVIEW WITH THE PRUSSIAN MINISTER OF EDUCATION

After the adjournment of the Bremen Congress, Hon. Charlemagne Tower, Ambassador of the United States to Germany, arranged an interview in Berlin for the writer and Fraulein Ottilie Hoffman, President of the German Woman's Abstinence Association, with Dr. Studt, the Prussian Minister of Education.

Minister Studt, having issued an order "requiring school authorities to organize anti-alcohol instruction in the schools under their charge," spoke of the need of co-operation by the teachers, and of failure without it.

The writer ventured to suggest that German experience was not unlike that of years ago in the United States, by which we discovered that the teachers did not know what to teach; that when graded text-books for teachers and pupils, showing what is true and therefore what ought to be taught and studied according to the best methods were ready for use, American teachers could do their part, the study began to thrive,

^aSee picture on page 15

and its results to be evident; that the subject matter and methods in ordinary school branches are the results of centuries of pedagogical study, but in a new subject like this, a good school literature is absolutely necessary to its success. I asked if the fact that there are no school text-books on this subject in the German language did not represent a need that should be met in order to ensure the success of the study and thus the education of the people away from alcoholic habits.

These suggestions were cordially received, not only by the Minister of Education, but by others whom I met, representatives of the government, of popular education, and of the court, all of whom manifested a deep interest in the subject.



Queen Louise at Tilsit

THE INTEREST OF THE GERMAN EMPRESS IN TEMPERANCE EDUCATION

In the midst of this general expression of concern that some effective method be devised for Germany to check the ravages of alcohol, a telegram summoned the writer and Fraulein Hoffman to "the Marble Palace at Potsdam, where Her Majesty, the Empress of Germany, graciously wished to receive" us. The royal carriage, which the invitation said would be in waiting at the station in Potsdam, was there, and took us to the favorite summer home of the royal family.^a

Her Majesty, the mother of six sons and a

daughter,^b is a tall, slender, beautiful woman, with a youthful face under a crown of light hair. Advancing to meet us with the most gracious of smiles, and with extended hand, she welcomed us with entire simplicity and absence of formality. In response to her questions, I told Her Majesty the story of the origin and progress of the movement which has put temperance education laws upon the statute books of our National Congress and every one of our forty-five states; of the organized mother-love in the Woman's Christian Temperance Union, with its representatives in every town, village and city of the land, watching to see that the children get this particular education;

^bSee picture on page 4

of our great but successful struggle for well-graded text-books on this subject; of what they teach; of the interest and good work of our public school teachers; of the importance, if the habits of the coming generations are to be influenced, of the study being progressive from the lowest primary grade; and finally of the results to individuals, to industry, and to the nation of this instruction. With these results it was evident that Her Majesty was not unfamiliar.

In the Hohenzollern Museum there is a picture of Queen Louise who is represented as saying when Napoleon I was advancing to take Berlin, "Whither shall I flee from him?" The picture showed the following lines from Goethe cut by the Queen with her diamond ring on a window-pane in the house in Tilsit to which she and her husband, King Frederick William, had fled:*

"He that with tears did never eat his bread,
He that hath never lain through night's long hours,
Weeping in bitter anguish on his bed—
He knows ye not, ye heavenly powers."

As the interview with the Empress which lasted over an hour was about to close, I ventured to say: "I saw yesterday in the Hohenzollern Museum a picture which represents Queen Louise, after the treaty of Tilsit was signed which cost Prussia half her territory, as visiting Pestalozzi's school and saying, 'We must teach the people. What we need is better education to make a new race of men.' Sixty-three years passed, and Napoleon III went down before Prussia and united Germany. 'A new race of men' had come upon the scene. German philosophers said it was Pestalozzi who did it. The defeated French said it was the German schoolmaster. Back of the German schoolmaster, back of Pestalozzi, was Queen Louise, the wise, far-seeing woman, who saved her nation by using her influence for the establishment of the system of public education that has made Germany great.

"What Napoleon was to the opening of the nineteenth century, the peril of the nations, alcohol is to the morning of the twentieth century. To another great woman on the throne of Germany has come the opportunity to extend a fostering hand to a system of education that will free the Germany of the future from the tyranny of alcohol which enslaves both the soul and body of its victims. On this opportunity, please allow me to congratulate Your Majesty and the great country over which your husband, His Majesty the Emperor, reigns."

With quick intelligence, showing remarkable familiarity with the history of her country and of the world, and a statesmanlike comprehen-

sion of the forces that go to make a people great, the Empress responded with great sympathy.

After the close of the interview, refreshments were served in another room, and the royal carriage took the visitors to the station.

When, through the proper channels, I asked what I was at liberty to report of this interview to my countrymen who are interested to hear about it, I received the following reply:

"Her Majesty, the Empress, is, as a rule, very much against any publication of her sayings or doings; but as Her Majesty is much interested in your work, she will graciously consent to make an exception in your case, to the extent of allowing you to publish the fact of the interview and her pleasure in hearing of your experience with regard to this important work. Her Majesty has every sympathy with this movement and wishes it all success, and I have pleasure in assuring you that Her Majesty was very pleased to make your acquaintance."

This letter explains why the many gracious sayings of the Empress in the interview are not given here.

A GERMAN CONCEPTION OF THE RELATION OF TEMPERANCE EDUCATION TO NATIONAL PROSPERITY

Said a man of affairs in Berlin, "Not until Germany has as good a graded system of public school instruction in temperance physiology as the United States, will the Germans be able to compete commercially with the clear-headed Americans."

Time will tell how soon Germany will have such a system as a part of her public school education. A beginning has been made. A sense of need is awakened that will not rest until it is met. It took twenty years from the enactment of the first temperance education law in America before the study could be said to be an established part of our public school system. It will not take twenty years in Germany. America has blazed the way with results that are the envy of the nations.

AN AWAKENING INTEREST IN ENGLAND

To every true American, England will always be the mother country. The prosperity of her people is that of a large portion of the English-speaking race of which we are a part. There also the writer was asked to tell how the United States is providing for coming generations of strong, sober citizens, by requiring that they shall in childhood and youth be taught obedience to the laws of health, including those that teach abstinence from alcoholic drinks and other narcotics. Among several addresses on this subject made by the writer, three were before large gatherings of representative people at drawing-room meetings in the London homes of members of the House of Commons and the House of Lords, those of the Hon. T. P. Whit-

*See picture on opposite page

taker, Lord Michael Biddulph, and the Earl of Carlisle, the meetings in the last two instances being presided over respectively by Lady Elizabeth Biddulph and the Countess of Carlisle.

The idea of universal, systematic, graded study of temperance physiology in the public schools, as a method for preventing the drink peril, was cordially received by these people who are in a position to make it a fact for their country.

In other ages, nations have studied one another's weaknesses as points of attack; twentieth century international relations are those of mutual helpfulness in the struggle of each for a higher civilization.

MARY H. HUNT.

Although, tested by the highest pedagogic ideals in method and manner, physiology and hygiene as now required in our public schools is as yet only imperfectly taught, I wished many times, during my recent three months' visit in many countries in Europe, that the American teacher who has done the best he can with this branch could realize, as I was often made aware, how much his work has contributed to our nation's greatness. "The greater sobriety of the American workman due to your public school system of physiological temperance instruction gives your country the lead," was a statement I often heard, and always with the mental wish that I could personally thank every teacher who is doing this good work for our beloved land and people. Let us teachers join hands for the best work yet in this subject for the coming year. Not so much that we may excel other nations, as that we may help the whole human family to the highest possible physical and moral living.

Teacher: "Tommy, next time you are late bring an excuse from your father."

Tommy: "Who? Father? Why, he isn't any good at excuses. Ma always finds him out."
—*The Lyre*.

THE BUSY CHILD

I have so many things to do
I don't know when I shall be through.

Today I had to watch the rain
Come sliding down the window-pane.

And I was humming all the time,
Around my head a kind of rime;

And blowing softly on the glass
To see the dimness come and pass.

I made a picture, with my breath
Rubbed out to show the underneath.

I built a city on the
floor;
And then I went
and was a War.

And I escaped;
from square to
square
That's greenest in
the carpet there.

Until at last I came
to Us,—
But it was very
dangerous.

Because if I had
stepped outside,
I made believe I
should have
died!

And now I have the
boat to mend,
And all our supper
to pretend.

I am so busy every
day,
I haven't any time
to play.

—JOSEPHINE PRESTON

PEABODY, in *Harper's Magazine*.

Mother—"Willie, you must stop asking your papa questions. Don't you see they annoy him?"

Willie—"No, ma'am, It isn't my questions that annoy him. It's the answers he can't give that makes him mad."—*Philadelphia Press*.

"Now, Max, what did you learn in school today?"

"I—I—I forget, papa."

"You forget. Why, look at Charlie Hopkins. He remembers everything he learns at school."

"Oh, well, he hasn't got so far to go to get home."



The Royal Family of Germany



Primary Lessons

FIRST YEAR

THE BODY AS A WHOLE

ANOTHER school year has begun, and in every town and city of the land the primary teacher faces a new roomful of restless bits of humanity. The nation of tomorrow is here before her. It must be educated, trained to high ideals in private and public life, and fitted to do its share of the world's work better than it has ever been done by any one before.

To meet this responsibility, the first thought must be for the child's physical well being. He will need robust health. Hence he must be well fed and properly clothed; he must live in sunny, well ventilated rooms; he must have play enough in the open air; and he must get ten or twelve hours of sleep every night.

In many cases it will require tact and long continued effort to bring about these essentials to child development, but the standard must not be lost sight of or lowered. Get the child's own co-operation. There is not a boy or girl in the world but is interested in his own body, —what he can do with it, why it is fashioned as it is, and how he can make it stronger and more beautiful.

Little children think in wholes and generalities rather than in parts or particulars. For this reason, it is wise to begin lessons in hygiene with stories of the body as a whole, following this general survey by more detailed study of the parts of the body.

(1)

WHAT WE CAN DO WITH IT

The ceaseless activity of the normal child during waking hours is proof that his first interest in his body lies in the things he can do with it. Here is a hint as to the best topic with which to begin.

Show the class the picture reproduced on page 7, or have ready a blackboard sketch of the same. Then tell the story of

HAROLD AND HIS GOATS

Harold was just through breakfast one morning when the doorbell rang. He ran to answer it, and there stood Uncle Theo with a handsome span of black and white goats hitched to a little wagon.

"Good morning!" said Uncle Theo. "Do you know of a boy named Harold who has a birthday soon? Here is a present for him."

"Oh, it's for me! it's for me!" cried Harold, dancing up and down in joy. "I'm eight years old today."

"Then you are the boy I'm looking for," said Uncle Theo, handing him the reins. "Jump in, and take a ride."

"Can't Ned come too?"

"Of course. There is plenty of room for you both."

Then two of their little playmates wanted to go, so Harold gave one his place and tucked the other in behind. It was fun enough for him to walk beside the goats and pat them every now and then.

They drove around the square and up into the park. The goats tossed their heads and trotted along as if the good time was all theirs. What fun it was!

By and by Mamma wanted some sugar, so Harold drove down to the grocery for it. Then he went to the creamery for milk.

Every morning he brought the mail with his new team. After that he took baby Grace for a ride. Sometimes there were errands to do for other people.

"What should we do without Harold and his goats?" everybody said. "They are so thoughtful for every one and they save us all so many steps."

LESSON TALK

Find the goats in the picture. What are they doing? Which one of the boys is Harold? Which is his brother Ned? How can we tell a boy from a goat?

Tell what Harold did with his goats. How did he help other people? What would you do if you had a span of goats and a wagon? What can you do without them?

What could Harold do that his goats could not? Which do you think can run faster, a boy or a goat? Which can draw a wagon better? Which can learn more quickly? Which would you rather be?

Tell some of the things you like to do. What games do you know how to play? What are some of the things that you did this morning before you came to school? Who has done something for somebody else today? Who will try to do something for others tomorrow?

THINGS TO REMEMBER

We are doing something nearly all the time we are awake.

We can work and play and run and jump.

We can have a good time ourselves.

We can help other people.

We can do many things that our pets can not, because our bodies are different from theirs.

(2)

WHY IS IT MADE UP OF PARTS

One reason why children can do more things than any animal is that they have better tools to work with. Perhaps you think that only grown people have tools, but that is not the case at all.

A tool is something that one uses to help him do things. What is the name of the little helpers that carry you up and down stairs whenever you want to go? How many of them do you have? Show me your right foot; your left foot.

How many feet has a dog? a robin? In what ways are our feet better tools than theirs?

Who can name another part of the body that helps us do things? What parts do we use when we play ball? Point to your left hand; your right hand.

How are our hands joined to our bodies? Put your hand on your left arm; your right arm. What do we call our arms and hands when we speak of them together? (Write the words, upper limbs, on the board.)

Which part of the body do we use when we think? This is the most important part of all. It has many things to do. What are they?

Point to the part of the head with which we eat our dinner. This part helps to keep us alive. We should starve to death without it.

What is the name of the part of the head with which we see? with which we hear? with which we smell?

Put your hands on the part that joins the head to the rest of the body. What is the name of this part? In how many ways can we move the neck? Turn your head slowly to the right; to the left. Bend the head forward; backward.

We have left the very largest part of the body to the last. What do we call it? What other parts of the body are joined to the trunk? Put your hands on it. In how many ways can you move the trunk? Bend the trunk forward; to the left side; to the right side; backward.

Point to each part of the body as I name it: head, neck, trunk, arms, hands, legs, feet. Tell something we can do with each of these parts.

Show the children a clam or oyster in its

shell. Ask if they can find its head or neck or legs. See if they can tell why their own bodies are made up of many parts, instead of being all in one piece. Tell them that the oyster has nothing to do but live, so needs only one part. People have many things to do, so their bodies are made of many parts.

THINGS TO REMEMBER

The parts of our body are tools for us to use. We need many tools because we have many things to do.

We have two feet to carry us wherever we go.

We have two hands to help us work and play.

We have a head to think with.

We have a neck to move the head.

We have a trunk to hold the other parts of the body in place.

(3)

* HOW WE SHOULD TAKE CARE OF IT

When Harold had had his goats six months, Uncle Theo came again one day. Harold took him out to the barn the first thing to see them.

Uncle Theo was delighted. They look better than they did when I first gave them to you," he said. "You must take pretty good care of them."

"Oh, I do," said Harold. "They have a clean bed of straw to sleep on every night, and three good meals every day. In the morning I give their coats a thorough brushing before I hitch them up."

"I hope you don't forget to water them often."

"No, indeed! They have a drink every morning and night, and whenever they are thirsty during the day. They have lots of work to do, you know, and father says they can't do it unless they are well taken care of."

"How is it that you think a goat's work is more important than a boy's?" asked Uncle Theo.

"I don't," said Harold. "I don't know what you mean."

"Why, you have been showing me what good care you take of your goats, how clean and well brushed they are, but your hair doesn't look as if it had been combed this morning, and I'm sure you didn't take a bath all over. I can see the very place on your neck where you stopped washing."

Harold grew very red. "I was in a hurry this morning," he stammered.

"But you don't start off with your goats in the morning till they have been well taken care of, do you? And isn't it more necessary to take good care of yourself?"

"Yes it is," said Harold, "and I'm not going to be careless again."

"You don't have to do it all," went on Uncle Theo. "You have a mother to get you good things to eat, make your clothes and keep them mended, and see that you have a good bed to sleep on at night. But there are many ways in which you can take care of your own body and help it to grow stronger and larger every day."

"One way is to keep it clean. You can't play or do any kind of work without getting some dirt on you, but every boy and girl ought to start in the day by being clean all over."

"It isn't enough to give your face and hands a good washing in soap and water. You need to take a bath all over, just as soon as you are out of bed in the morning."

"Your hair needs a good brushing, too, and of course you wouldn't think of going to the breakfast table without brushing your teeth and cleaning your finger nails."

"Boys and girls are a great deal more valuable than any animal, and have a much more important work to do, so they can't afford to take any but the best care of themselves."

THINGS TO REMEMBER

Nobody can do good work with his body unless he takes good care of it.

Our parents are helping us take care of our bodies when they get us food to eat and clothes to wear.

We are taking care of our bodies when we keep them clean.

TEACH CHILDREN TO BE CLEANLY

Commissioner of Health Reynolds, of Chicago, believes that school children should be taught better manners with reference to the care of their mouths and noses. If they are in the habit of wetting their fingers, spitting on their slates, making a general depository of their mouths, or swapping apple cores, candy, chew-

ing gum, half eaten food, whistles, bean blowers or anything of that nature, they should be taught better. He has sent a copy of the rules to the board of education, with the hope of having them introduced in the public schools. Here are some of his suggestions:

TEACH THE CHILDREN

1. Not to spit; it is rarely necessary. To spit on a slate, floor or sidewalk is an abomination.
2. Not to put the fingers into the mouth.
3. Not to pick the nose.
4. Not to wet the fingers with saliva in turning the leaves of a book.
5. Not to put pencils into the mouth or moisten them with the lips.
6. Not to put money into the mouth.

7. Not to put pins into the mouth.

8. Not to put anything into the mouth except food and drink and the tooth brush.

9. Teach the children to wash the hands and face often. See that they keep them clean. If a child is coming down with a communicable disease it

is reasonable to believe that there is less chance of infecting persons and things if the hands and face are washed clean and kept free from the secretions of the nose and mouth.

10. Teach the children to turn the face aside when coughing and sneezing, if they are facing another person.

11. Teach the children that their bodies are their own private possessions; that personal cleanliness is a duty; that the mouth is for eating and speaking and should not be used as a pocket; and that the lips should not take the place of fingers.—*Chicago Record-Herald*.

Go to bed early—wake up with joy;
Go to bed late—cross girl or boy.
Go to bed early—ready for play;
Go to bed late—moping all day.
Go to bed early—no pains or ills;
Go to bed late—doctors and pills.

—*St. Nicholas*.



"It was fun enough for him to walk beside the goats"



Grammar Lessons

FOURTH YEAR

FOOD

NOWADAYS, when vacant plots of ground for school gardens may be had in nearly all cities for the asking, it is possible for every child to have practical knowledge of the source of food supplies and to take some part in their production.

In this way, the city as well as the country child has a chance to taste fresh fruits and vegetables of his own raising. Thus, unconsciously, he is setting up for himself a pure food standard which will tend more and more to control his appetites and to banish unwholesome and harmful substances from his dietary. The child with a garden learns at first hand how plants grow, and the kind of care that each needs to bring it to perfection. Best of all, he comes to respect the property rights of others and ceases to molest his neighbor's garden or orchard.

Primary and grammar schools which have not yet taken up this work should certainly plan for gardens next spring. Make the necessary arrangements now, giving to each child a plot of ground for his own in which to raise one or more food plants for his home table or to sell. Then let a part, at least, of the class study of foods during the winter serve as a preparation for this garden work. One topic may be

NATURAL FOODS

These grow in the ground ready for our eating.

For the first lesson, ask the class to write the names of all the food plants they have seen growing. Are there others that will grow in this locality? Find out before the next lesson.

What food plants has any one seen in the market or elsewhere which do not grow here? Where do such come from? Have the class consult geographies, fruit dealers, etc., on this point, then write the names of all the foreign food plants they find. Some of the food plants look so much alike and are used in so much the same way than we can group them together and

call them by one name. Let us see if we can think of such groups.

What do we call those food plants that grow something like grass, with small, hard seeds? Write the names of grains or cereals that are used for food. Connect with the geography lessons, by asking the class to find on the map the states or countries in which each is raised in large quantities.

What part of these plants do we use for food? What is done with the straw?

There are other plants that are either entirely or in large part good to eat. What are such plants called? Name all the vegetables you have seen. Which of these have leaves that are good to eat? What stems do we eat? What roots? What tubers?

What trees bear fruit that is used for food? Name the kinds of nuts that you have eaten. What else that is good to eat comes from trees?

Some of our best fruits grow on bushes. Name them. Others come from vines. What are they? In what plants does the part that is good to eat grow underground?

Which of all these food plants can be eaten raw? Which have to be cooked? Tell what you had for breakfast this morning that was once a plant. Where did it grow? What had to be done to it after it left the field before it was ready to eat?

PREPARED FOODS

All the kinds of food that we have been talking about thus far are plants and grow in the ground. Many of these foods can be eaten raw, and all can be eaten by simply cooking them. But there are other plants which people can not eat at all, though these are good food for animals. Name some of these plants.

Cows and sheep take this food, the grass and hay and cornstalks which are of no use to us, and make it over into milk and beef and mutton which we can eat. Name all the foods which we get in this way from animals. We may call food of this kind, prepared food, because it has to be prepared, or made ready, for us by animals.

What food does the hen prepare for us? What does she eat that would be of no use to people? Sometimes we have fish on the table. We can eat and enjoy it, but we could not eat what the fish does. Name other foods that have to be prepared by some other living creature before they can be eaten by man.

Even the natural foods, those that we can eat just as they come from the ground, have to be made ready for us by the plants. We could not get any food from the earth itself, but the plant can, and it turns this food into roots and stems

and fruit which we can eat. So there is really but one food that does not have to be prepared for us by something else. What is it? Air. This is the only food that is ready just as it is for every living thing, people and animals and birds and fish and plants. And not one of us all can get along without it.

KINDS OF FOOD TO BE USED TOGETHER

We have talked about a great many different kinds of food. No one could possibly eat them all at a single meal, so we must know what are the best kinds to be eaten together. Before we can decide this we must find why our bodies need food, and what each kind does for the body.

Refer the class to their physiologies on these points, giving page and paragraph until they are familiar enough with the book to find any topic for themselves. It will be a good plan to have the chapter on this subject read aloud by different pupils. A class talk should follow the reading, to show what points, if any, have

not been understood by the children. All such can then be illustrated and explained in detail. This work will require an entire recitation period.

As a result, the class should come to the next lesson knowing that children need food to make them grow, food to strengthen their muscles for work and play, food to keep them warm in winter and cool in summer. Ask them what kind of muscles they would have if they ate nothing to build up the body. What hurt would it do to eat only heat-producing foods in the summer? What kinds of food do we need every day? Which kind do we need less of in hot weather? in cold?

Have the class write the names of these kinds of food,—Food for Growth, Food for Repair, Heat-making Foods, Cooling Foods, Fatty Foods. Under which of these heads shall we put the grains? meat? eggs? milk? butter?

nuts? fruit? Which of these foods belong in more than one class?

The children will doubtless be able to classify at once some of the most familiar foods. Refer them to their text-books for others, having the passages read aloud and talked over until all know just why each of the more common foods is needed by the body.

Bring out the same ideas in another way. For instance, ask why we need butter with bread; why butter and cream are not needed at the same time; why one should eat freely of fruit and vegetables and but little meat in summer; why milk and eggs are good food for children.

What can we select from all the foods talked about thus far that would make a good breakfast at a low cost? a good supper? One or more lessons may well be given to this topic alone,

the children writing first their own ideas as to such menus. The results should then be read aloud, that necessary changes be suggested by other pupils or by the teacher. The class will be eager to carry their corrected



"Think, oh, grateful think!
How good the God of Harvest is to you;
Who pours abundance o'er your flowing fields."

papers home and try the bill of fare which they have planned. Encourage them to do this.

OVEREATING

When shall we eat? When shall we not eat? Write these two questions on the board for the class to think about before coming to class. The natural answer to the first, viz., when we are hungry, will suggest that we should not eat when we are not hungry. Why not?

Go over again with the class the reasons why one must eat, summing them all up in the thought that food is necessary to give one a strong, healthy body.

Find out if any child in the class has a father who is a carpenter. Ask what material he uses in building a house. How does he know how much wood, or stone, or brick, or glass to use? Does he ever make a mistake and have 5000 or 6000 feet of lumber left over? Why not?

Every one of us is a builder. What do we have to build? What material do we use in building our bodies? How does it make us feel when we use too much building material for dinner or any other meal?

If the subject of overeating is brought out in the text-books at hand for this grade, have such passages read aloud by some of the class at this point in the lesson. If not, explain simply how overeating hurts the body.

It gives one the stomach-ache to begin with. This shows that the body has been given more building material than it can use. If a carpenter has too many bricks, he can perhaps sell some, or use them in some other house, but the body can not get rid of extra food in this way. It has to try to use it up, and this makes it work too hard. Sometimes it is hardly able to work at all, and such people say they have dyspepsia. What rules shall we make about eating if we want to avoid this trouble and have strong stomachs and well built bodies?

THINGS THAT ARE NOT FOODS

What would you think of a carpenter that put poor bricks every now and then into the building he was putting up? Would you like it if that were your house? Did you ever hear of any one using poor building material for his own body? What did he use?

What kind of building material do tea and coffee make for children? green apples? fruit that has begun to decay? too much meat?

Sometimes a boy thinks it will make him manly to smoke cigarettes, or drink a glass of beer now and then. What kind of building material is he using? What kind of a body can he make out of it?

The carpenter may deceive his customer and get pay for poor bricks, but who will make up the loss to us if we put tobacco or wine or beer or cider or anything else into the building of our bodies that hurts them?

AUTHORITATIVE QUOTATIONS

WHY ALCOHOL IS NOT A FOOD

Milk, eggs, meat are true foods, warming the system and repairing muscular waste. But alcohol does not warm the body. It tends to cause degeneration of the tissues, and to destroy the health of adults and their offspring. If alcohol were a food it would certainly be a most poisonous food to produce such curtailment of the lives of its votaries, even when using it moderately.—CHAS. R. DRYSDALE, London.

As regards the food value of all alcoholic beverages as a whole, the spirituous liquors may be eliminated at once as having no value, because they contain practically nothing but

alcohol and water. Wine and beer, indeed, contain sugar and extractives, but the quantities are very small. We may, therefore, without further consideration, decline to regard alcoholic beverages as foods.—JOHN MADDEN, M. D., Milwaukee.

ALCOHOLIC DRINKS WEAKEN INSTEAD OF GIVING STRENGTH

The verdict of medical science is emphatic enough; it tells us that alcohol is in no real sense a food, and that the idea that these drinks strengthen the body is a complete fallacy. Every cyclist knows that he can go farther and faster without alcohol than with it, and that beer—often a single glass—will “take the steam” out of him.—J. JOHNSTON, M. D., Edinburgh.

ALCOHOL HAS POISONOUS PROPERTIES ONLY

No substance is able to undertake the double role of a food and a poison, and for alcohol no nutritive but only toxic properties can be claimed.—MAX KASSOWITZ, M. D., Professor in the University of Vienna.

AN ACTIVE POISON

Every standard work on chemistry, materia medica, toxicology and medical jurisprudence in the English language declares alcohol to be an active poison. More deaths are reported every week as resulting directly from the use of alcoholic drinks than from all other poisons enumerated in the statutes of the states in a year.—*Bulletin Am. Med. Temp. Assn.*

ACCOUNTED FOR

I am not feeling well today,
But why I can not see,
I had some ice cream across the way,
And pancakes home for tea.

I also had some caramels,
And sugared almonds, too;
And when I met with Tommy Wells,
A stick of fine tulu.

But I was careful with each one,
Too much of none I ate—
It can not be that penny bun,
And yet the pain is great.

I had six cookies but I've had
Six cookies oft before;
They've never left me feeling bad,
Nor pickles,—three or more.

The soda water couldn't make
Me ill—it was Billy's treat;
I sort of think this fearful ache
Comes wholly from the heat.

—*Harper's Young People.*

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"Between the flowering and the flaming woods,
All greening in the rain,
The fields unfold,
The sun upon the grain
Outpours its gold;
And sweet with sun and rain are Nature's moods
Between the flowering and the flaming woods."

THE BATTLE OF THE NATIONS

THROUGH the courtesy of our American consul, a few months ago in the suburbs of Leipsic, Germany, I stood on the hillock upon which is a monument with the following inscription on one side:

"From this mound Napoleon I. watched the Battle of the Nations, October 18, 1813."

On the reverse of that square block of marble is a recognition of the help of the God of battles, in these words:

"The Lord is a man of war: the Lord is his name."

THE STRUGGLE OF THE NINETEENTH CENTURY AGAINST MILITARISM

Children were playing where the man of destiny watched the ebb and flow of battle nearly one hundred years ago. The waving grass and nodding buttercups on what were once blood-stained fields of carnage whispered lessons of hope as they told of the futility of human ambition when arrayed against God's purposes for human progress, even when such ambition is endowed with matchless ability.

At the time of that battle, Napoleon was the terror and menace of all Europe. With no hereditary rights to a crown, he was Emperor of France by right of force. He had despoiled Austria, Prussia, Italy and other continental nations, menaced Russia, and was plotting against England. No single nation dared cope with him.

There is a most pathetic representation in

one of the great galleries in Leipsic of a scene during those times in one of the recruiting offices in Prussia. King Frederick William had made a moving appeal to the people for money and supplies for the army needed to drive Napoleon from their homes and fatherland. On that large canvas is pictured the well-to-do man handing over a large bag of coin; the shopkeeper, the artisan, and the farmer spreading out their hoarded marks; the laborers, with their picks and shovels on their shoulders, counting out their savings; men and women laying down the family spoons and silver candlesticks to be melted into coin; the children giving up their pfennigs; women their marriage rings; young girls cutting off and offering their long, beautiful hair that its price might help equip the soldiers.

One will go far to find another such picture of the sacrifices of a people to repel an invader. But all this would have been in vain without other resources, for Napoleon could command more men and treasure than the utmost Prussia could do alone. But Austria, Russia and Prussia combined, with a force of 160,000 strong, did what no one of the nations single-handed could have done, defeated Napoleon in the Battle of the Nations, drove him out of Leipsic, and prepared the way for his final defeat at Waterloo.

THE STRUGGLE OF THE TWENTIETH CENTURY AGAINST ALCOHOL

Napoleon, once the dread of all Europe is no more. His marshals and generals are but names in history. Nevertheless, in this opening of the twentieth century the civilized nations have an enemy more powerful, a menace greater, more to be dreaded, than Napoleon ever was. That enemy is alcohol and other narcotics. It does not invade the nations with great armies under the command of generals and marshals, and with sword, shot, and steel in drawn battle make the people tributary by brute force as Napoleon did one hundred years ago. Alcohol comes as a false friend in the form of beer, wine, cider or other alcoholic liquor that the drinker thinks furnishes strength and comfort. In that way it creeps in upon its victims, one by one, destroying and enslaving in large numbers and levying a heavier tribute than war ever did.

No intelligent observer can fail to see that even as Napoleon's militarism menaced the dawn of the nineteenth century, so alcoholism is the peril threatening the nations that are to make the history of the twentieth century.

Will that history be the story of advance in human progress? This depends on what the nations do with alcohol which both experience and science today prove to be the greatest demoralizing force in the world.

Misapprehension or ignorance of the real character of alcohol and other narcotics and of their power for evil even in small quantities is the secret of its destructive sway over the race. Since the days of Noah men have thought that a moderate amount of alcohol in beer, wine, cider, or other forms is at least harmless. Science dispels the illusion by showing that alcohol is a narcotic, and like other narcotics, a little has the power to create an uncontrollable desire for more and more, until the drinker, becoming the slave of alcohol, cares more for it than for anything else. Universal public school education of all children and youth as to the dangerous character and evil effects of alcoholic drinks and other narcotics, in connection with the laws of health, is the plan of battle.

THE AMMUNITION AND RECRUITING ARMY

Like that of Leipsic ninety years ago it is becoming, in more ways than one, the Battle of the Nations, for which each of the civilized countries is contributing ammunition, in the shape of scientific evidence, and propagandists who are rapidly recruiting the whole people into a mighty army of total abstainers.

England gave to the world the great scientist, B. W. Richardson, who taught the people in plain and simple language about the deterioration of structure and derangement of function which follow the use of alcohol.

France gave us chemists who taught that all alcohols are poisons; and Pasteur, who discovered the cause of fermentation, thus enabling us to show how good fruit and grain juices are changed to poisonous drinks.

Germany gave us Schmiedeberg, who taught that the characteristic action of alcohol is depressant instead of stimulating; Fick, who declared it a poison, the use of which is abuse because its use tends to abuse; and Kraepelin and his pupils, who have shown how alcohol diminishes working ability.

Switzerland has given us Bunge, whose classic work on *Physiological Chemistry* taught that alcohol is not to be regarded as a food, nor as an aid to digestion, nor as a stimulant, but as a deceiver and a menace to health; and Forel, who has taught us the disastrous results of alcohol upon the nervous system, and the descendants of the drinker.

Russia has given us Koppe, who showed that other poisons which no one thinks of calling foods are oxidized in the body and yield energy; and that "the chemical nature of a substance can not change with the quantity, and can not be lost in the smallest quantity."

Belgium has given us Destrée, who showed the weakening effect of even small quantities of alcohol upon strength of muscle.

Austria has given us Kassowitz, who has shown that it is untenable to hold that alcohol can play the double role of food and poison.

These are by no means all the representatives of the nations who could be named, if space permitted adequate presentation of all their valuable contributions.

The United States has taken all these testimonies, as well as that of her own scientists, and has fitted them into a compulsory system of progressive instruction in physiology and hygiene for all pupils in all her public schools, the fruits of which are so many witnesses to the world of the effectiveness of the system. To discover a truth or a principle is much, but so to apply that principle that it will reach and continue to influence for good the lives of untold millions is a gigantic benefaction. Every school-house over which our flag floats is a center from which these truths concerning total abstinence and other laws of health are radiating.

We welcome you, teachers, back to this high service for humanity at the close of the long summer vacation. We hope you are rested and eager for your God given opportunity. In so teaching the physiology lessons that your pupils will feel the glory and beauty of perfect health, and understand why the body needs pure air, cleanliness, good food, pure water, and other sanitary conditions; and why alcohol and tobacco poison and injure the best part of the human being, you are the drill masters who are training the mighty army of young Americans for the coming contest. Before their intelligent strength, alcohol and other narcotics will find their Waterloo in our own country, while by the power of example aid will be rendered to other lands in this modern "Battle of the Nations."

Friends of scientific temperance will be glad to know that the many valuable papers read before the Bremen Anti-Alcohol Congress are to be collated and printed in pamphlet form. For the additional convenience of the English speaking public, the most important of these papers will be translated into English and published in the JOURNAL from month to month. Some of the topics to be thus looked for are

Modern Civilization and the Struggle against Alcoholism

Dr. John Bergmann, Stockholm

Alcoholism and Tuberculosis

Dr. Legrain, Paris

Alcohol in the Vital Processes of the Race

a) Dr. med. Alfr. Ploetz, Berlin

b) Dr. med. Rüdén, Berlin

The Place of Alcohol in Homes of Refinement

Dr. pol. M. Helenius, Helsingfors

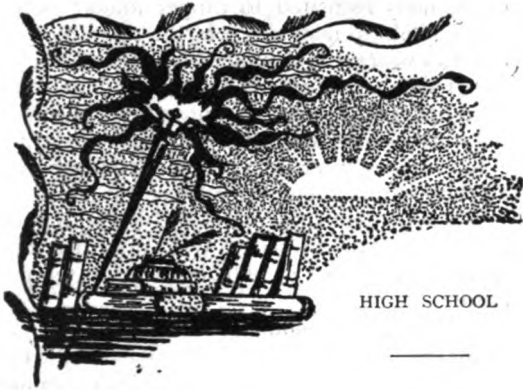
Humanity and Narcotics

Dr. med. A. Forel, Zürich

Alcoholism and Beer

a) Dr. med. Keferstein, Göttingen

b) Dr. med. Delbrück, Bremen



THE GROUNDWORK OF THE BODY

ACCORDING to Froebel, the true aim of education is to direct natural activities to useful ends. "What can you do?" not "What do you know?" is the first question that meets a youth as he leaves school, and his business success will depend largely upon his ability to answer it promptly and surely.

True, one must know before he can do, but knowledge becomes of practical value only when its possessor can transmute it into action. This insistent demand for *results* in the business world is giving new impetus to the study of physiology and hygiene, because the body is every man's first stock in trade. It must be physically robust and so trained that its every motion tells, before one can hope to do his best.

This means that the youth must know his body as the engineer knows his engine,—its mechanism, the harmonious action of its parts, and what he can do with it as a whole. Most important of all, he must understand how to take care of it to keep it in good working condition.

Different in structure as is the material of which the various parts of the body are composed—bone, muscle, nerve, brain—all are made up of the same minute substances called cells, arranged in various ways. Hence, high school study of the body may well begin with these fundamental particles.

STRUCTURE OF CELLS

At the beginning of the school year a certain amount of time must always be given to reviewing work already done, before new topics can be studied to advantage. In taking up the subject of cells, with high school pupils, let this review be on the parts of the body.

Ask the class to write the names of the external parts of the body; of its internal parts. Have one of the lists read aloud that each may add to his own any parts that may have been omitted.

Have the class then make a list of the parts of the body of some of the higher animals, *e. g.* the dog, noticing points of likeness and difference between this and the man. Make a third list of the parts of a plant, *e. g.* a tree, comparing these with both man and animals.

Bring out the fact that all are alike in being made up of *different* parts each of which has its own work to do. Examine objects that have never been alive, stones, chalk, glass, and find whether the parts of which each is made are unlike. Why not?

The class are now ready to learn what the parts of any living body are made of, and how these different tissues are formed. The school should, own or have access to a compound microscope magnifying 200 diameters. If this can not be had, use as large a magnifying-glass as possible. Have each pupil examine through this a thin slice of watermelon or potato, another of bone cut crosswise, a shred of boiled lean meat, and scales from the back of the hand. If circumstances allow, examine also the amoeba which can usually be found in shallow pools. If not, refer to pictures of this one-celled animal to be found in many physiologies, until its structure and mode of life are familiar.

Have them notice the differences between the cells in plants and animals, also between those in the various kinds of animal tissue examined. How do both animal and vegetable cells differ in appearance from particles of stone? Find how all the necessary functions of animal life are performed by amoeba.

Let the first text-book lesson be based on the observation exercises just described, the pupils finding in this way the meaning of what they have seen, and obtaining good definitions of such necessary terms as cells, protoplasm, lymph, nucleus, and nucleolus. Each should also make drawings of plant and animal cells as seen through the microscope.

WORK OF CELLS

In taking up this topic, bring home to the class most vividly the important particular in which all living matter, plant and animal alike, differs from every kind of mineral,—that of being able to grow or build itself up from within. This work is done entirely in the cells.

Illustrate by diagram the manner in which cells grow,—by division into two or more parts. Call attention again in the specimens examined under the microscope to the fibers and inter-cellular substance surrounding the cells, giving the name, tissue, to this combination of material.

In the lowest forms of life, as already seen in the amoeba, the cells are all alike and all do several kinds of work. They become, in turn, legs and arms to catch the food, a mouth to eat

it, and a stomach to digest it. How does this correspond to life in a savage community? Compare the many kinds of work done by Robinson Crusoe with that done by a workman in a large watch factory today. In what way is it an advantage for a person to do only one kind of work?

Think next of the important tissues of the body. Are these alike or different? What does this show about the work of each? Find the special property or properties by which bony tissue is distinguished from all other varieties. Find the same with regard to muscular tissue; epidermic tissue; nerve tissue.

Show that all these differences are the work of the cells which make up the separate tissues. Each group of cells selects the kind of food needed to build the special tissue of which it forms a part, and this determines whether it shall be hard or soft, elastic or unyielding, bone, or muscle, or nerve.

Bring out the fact that this division of work in the body creates a demand for other kinds of cells besides those needed to build up the various tissues. There must be a distributing system to carry food to every part of the body, since this is received only by the digestive organs, instead of by the whole body as in the case of the *amœba*. There must be an excretory system for a similar reason, and a controlling system to see that each part and organ of the body gets just the right amount of nutriment, and also that it works in harmony with all other parts and organs. Each of these systems is built up of cells differing as widely in the work they do as in structure.

ESSENTIALS TO CELL GROWTH

An engineer must get the utmost out of his engine. He can do it only by using the best fuel and keeping the engine in perfect condition. Much more is this true of the body which is vastly more complex in its structure and workings, and capable of infinitely nobler effort.

Its myriads of cell workers need a proper food substance with which to repair their waste and build new material. Each kind of cells must have its own kind of food, so man must have a varied diet. Of what substances must it consist? Make lists of foods containing these necessary constituents, and show which should be used at the same meal.

The cells can not work without oxygen. How are they to get it? When is a room well ventilated?

The cells of which the skin is made can not remain healthy unless the body is kept clean. What rules for cleanliness should be followed?

The cells can not work in a temperature that is too high or too low. How is the temperature

of the body regulated to proper limits? How can we help to maintain it at the right temperature in winter? in summer?

If plants are given alcohol instead of water they stop growing, shrivel up, and die. Animals fed with alcohol are stunted, feeble, and dull. What may we infer from this as to the action of alcoholic drinks upon the cells of the body?

We know that drinking-men are the first to succumb to cold or heat. What does this show as to the effect of alcohol upon body temperature?

The habitual moderate drinker is shorter lived than the total abstainer. What does this prove as to the action of alcohol on the life and health of the cells?

The drinking-man can not do so much work as the abstainer, he can not work so long, and his work is almost invariably of poorer quality. What has alcohol done to the cells of his muscular and nervous system to produce such results?

Other problems will suggest themselves and should be considered as far as time will allow. The central truth to be brought out in each is the same, that alcoholic drinks, or narcotics of any kind, interfere with the nutrition of the cells and prevent both their development and their healthful action.

AUTHORITATIVE QUOTATIONS

The entire human organism springs from cells; if the integrity of any organ suffers, the whole organ suffers in its functional activity.

By microscopic research it has been shown that the living cell and its protoplasm undergo pathological changes and fatty degeneration which prevent their normal growth and transformation into healthy tissue. These changes occur in persons who have taken moderate doses of alcohol, and are produced in health. They must occur more extensively and more forcibly when the body is suffering from disease.—J. W. GROSVENOR, M. D., Buffalo.

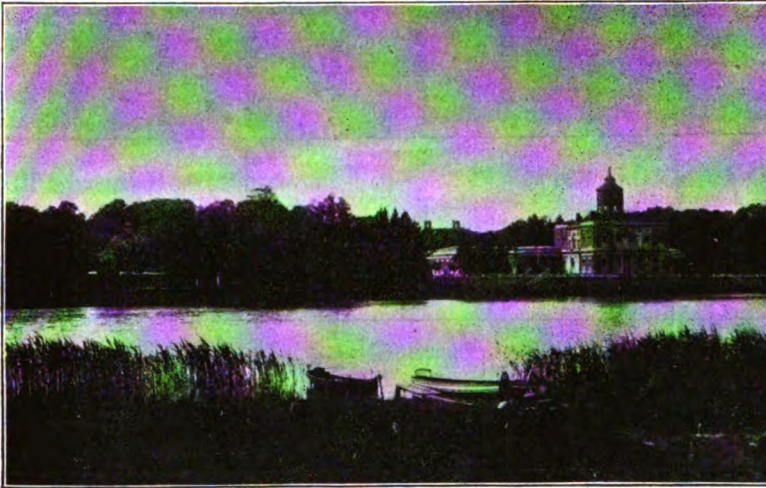
With protoplasm, under the influence of alcohol, breaking down (catabolism) exceeds building up (anabolism).—E. CLAUDE TAYLOR, M. D., F. R. C. S.

Professor Victor Horsley has shown that quite a small dose of alcohol carried to the brain has an effect on the cells of the brain which is never completely got rid of. By paralyzing the cell centers, alcohol robs a man of the control of certain of his lower faculties. This is the explanation of the glib tongue, and the muscular action of the drunkard.—McADAM ECCLES, M. D., F. R. C. S.

As little as one drop [of alcohol] in a quarter of a pint of water can exert an adverse influence on the growth of protoplasm. The same effect is seen on the growth of geraniums, plants watered occasionally with water containing 1 per cent of alcohol soon beginning to droop and wither.—J. J. RIDGE, M. D., London.

The only rational explanation of the greater longevity of abstainers over moderate drinkers, as shown by 34 years' experience in a British life insurance company, is that the result of drinking alcohol is to produce gradual degeneration of various organs and tissues so that in course of time these are unable to carry on their functions or resist the attacks of disease.—*British Med. Temp. Review.*

All the cells and tissues of the body are surrounded by membranes, on the integrity of which the silent work of building up the body depends. Alcohol, by its power to coagulate albumen, condenses, thickens, and clogs these membranes, thereby hindering the endosmosis and assimilation of nutrient materials, and the exosmosis or excretion of broken-down, retrograde products and toxins from the body.—E. STUVER, M. D., Ph. D., Colorado.



The Marble Palace at Potsdam in which the Editor was received by Her Majesty the Empress of Germany

paradox that philosophy, the science of abstractions and obscurities, becomes the most practical, as equipment for the spiritual wear and tear of human life.

Aside from the discussions that must creep into every well taught English, history, or even language course, little has been done with philosophy in high schools, not nearly so much as could be done with the aid of such books as "*The Virtues and Their Reasons*," which has been especially prepared for use in high schools, academies and seminaries. In short, simple chapters, Mr. Bierbower treats of the virtues, dividing them into two classes, duties regarding others chiefly and those concerning self. Almost any chapter would awaken interesting and profitable discussion among intelligent boys and girls.

In a school where the curriculum is too full to admit the study as a separate branch, much of

value can be gleaned from this book for the Civil Government classes.

THE SCIENCES, A Reading Book for Children, by Edward S. Holden, Librarian of the United States Military Academy, West Point, N. Y. Ginn and

Company, Publishers, The Athenæum Press, Boston, 1903.

The main object of this volume is to help the child to understand the material world about him. "*The Sciences*" is attractively gotten up in the form of conversations between a summer vacation group of twelve year olds who are interested, like all children, in the "why" of things, and an older college brother, who is a sort of unobtrusive encyclopædia, upon astronomy, physics, chemistry, physiography and meteorology. Emphasis is laid upon phenomena that the child himself can observe, and instruction is given him as to how to go about it. The book read in school or at home, would certainly, as the author says, "widen the outlook of American school children in the domain of science, and of the applications of science to the arts and to daily life." There are good illustrations to aid the text.

BOOK NOTICES

THE VIRTUES AND THEIR REASONS, by Austin Bierbower. Hinds and Noble, Publishers, 31-33-35 West 15th Street, New York City.

All who think are philosophers; for while few give much formal thought to the enigma of the highest good, or name themselves Utilitarians, Hedonists or Kantists, the path of each is blocked from time to time by problems of practical ethics that must be solved before one can progress on his every-day way. And so, as life slips by, each of us unconsciously works out a code of duty, pleasure or expediency by which he tests the elements of life. Herein is born the

September, 1903

SUGGESTED TOPICS FOR THE YEAR

June, 1904

	GRADE I.*	GRADE II.*	GRADE III.*	GRADE IV.	GRADE V.	GRADE VI.	GRADE VII.	GRADE VIII.	HIGH SCHOOL.
Sept.	Body as a whole: What we can do with it.	Wholesome food and drink.	Parts of the body: how made up.	Special senses.	Aids to growth and repair.	Review work of	Organs of body.	Review work of	Fermentation.
Oct.	Position. Playing. Working.	Unwholesome food and drinks.	How the body is held in place and supported.	Lungs and breathing.	Growth hindered by tobacco.	Fifth year.	Body training.	Seventh year.	Cells.
Nov.	Growth. Rest. Sleep.	Behavior at table, at home, on street, in school.	How the body can move.	Heart and blood.	Food.	Alcoholic drinks.	Body cleanliness.	Respiration.	Organs of body.
Dec.	Parts of body nec- essary to life: head, trunk.	Cigarettes: their effect on growth and health.	How the body is kept alive. Heart and lungs.	Brain and nerves.	Digestion.	Special senses.	Body needs.	Circulation.	Organs of motion and support.
Jan.	Parts used in work and play: hands, arms, fingers.	Exercise and rest, growth and re- pair.	Needs of body, for food. Rules for eating.	Muscles. Bones.	Blood and its work.	Nervous system.	Food.	Excretion. Cleanliness.	Food. Organs of diges- tion.
Feb.	Parts used in mov- ing about: legs, feet, toes.	How we find out things: sense of sight.	Care of teeth. Work of stomach.	Skin and cleanliness.	Heart.	Body heat.	Digestion.	Nervous system.	Organs of circula- tion.
Mar.	Cleanliness and care of body.	Sense of hearing. Sense of smell.	Right and wrong use of grains. Harm in beer.	Food.	Organs of breath- ing.	Skin and its care.	Cells.	Special senses.	Organs of respira- tion and excre- tion.
Apr.	External needs of body: clothing, shelter.	Sense of touch. Skin and cleanli- ness.	Work of brain and nerves.	Alcoholic drinks and tobacco.	Bones.	Excretion.	Fermentation.	Bones.	Nervous system.
May	Internal needs of body: food, drink.	Sense of taste. Teeth. The voice.	Covering of body. Cleanliness.	Digestion.	Muscles.	Respiration.	Alcoholic drinks.	Muscles.	Special senses.
June	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.	Reviews.

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• CONTENTS •

	PAGE
Temperance Education an Element of National Power - - - - -	17
Modern Civilization and the Battle Against Alcoholism - - - - -	20
Primary Lessons—Second Year—Unwholesome Food and Drink - - - - -	21
Editorials - - - - -	25
Grammar Lessons—Fifth or Sixth Year—The Tobacco Habit - - - - -	27
Scientific Temperance Indorsed by Good Temp- lars - - - - -	32

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No. 2

THE HEART OF THE HILLS

THERE'S a wonderful country lying,
Far off from the noisy town,
Where the windflower swings,
And the veery sings
And the tumbling brooks come down.
'Tis a land of delight and of laughter,
Where peace all the woodland fills;
'Tis the land that lies
'Neath the summer skies,
In the heart of the happy hills.

The road to that wonderful country
Leads out from the gates of care;
And the tired feet
In the dusty street
Are longing to enter there;
And a voice from that land is calling,
In the rush of a thousand rills,
"Come away, away,
To the woods today,
To the heart of the happy hills."

Far away in that wonderful country,
Where the clouds are always blue,
In the shadows cool,
By the foaming pool,
We may put on strength anew;
We may drink from the magic fountains
Where the wine of life distills;
And never a care
Shall find us there,
In the heart of the happy hills.

—Boston Transcript.

TEMPERANCE EDUCATION AN ELEMENT OF NATIONAL POWER

BY MARY H. HUNT

IN the stress of industrial and commercial competition which yearly becomes keener, each nation is searching eagerly for causes underlying the success of others, and for the forces at work in the production of desirable phases of national life.

In pursuit of this inquiry, twenty-three delegates from trade organizations in Great Britain visited the United States in the autumn of 1902, at the initiative and expense of Mr. Alfred Mosely, to study the industries in which each was especially interested, to investigate the methods employed, and the social conditions of the workers. Their recently published reports, valuable from many points of view, are especially noteworthy for their contribution to the increasing volume of evidence that the sobriety of the American workman is an important factor in the industrial and commercial power of the United States.

"My personal conclusion," Mr. Mosely himself wrote, "is that the true-born American is a better educated, better housed, better fed, better clothed, and more energetic man than his British brother, and infinitely more sober. As a natural consequence, he is more capable of using his brains as well as his hands."

Mr. Thomas Ashton said:

"I consider the general conditions of life of the American workmen better than what obtain in England. The great bulk of the workmen spend less money for drink and gambling, and as a result they are in a position for enjoying more of the benefits arising from better social surroundings."

Mr. T. A. Flynn, referring to the question of saving by American workmen, said in his report:

"So far as inquiries give results, there is no manner of doubt that the working classes of America save more money and save it more easily than the working classes of England. The absence of gambling on horse races and of heavy drinking no doubt contributes to this result. The American workingman has not even the mildest interest in the former, and is certainly entirely against the latter; virtues which we hope the Atlantic will not forever keep on the other side."

To the definite question which the delegates were asked to answer, "Is the American workman more sober than the English workman?" four delegates thought not or could not express an opinion. Seven admitted that it was so, and eleven answered emphatically in the affirmative. Mr. W. Coffey said:

"Drinking is not so rife. That there is far too much drinking and too many saloons will at once be admitted, but the habitual boozier, as we know him, can not exist. He loses chance of employment and must either give up speedily or go under."

THE RELATION OF SOBRIETY TO NATIONAL PROSPERITY

The question of the sobriety of a people is more than a personal one. It is becoming solemnly national, since the fate of nations is bound up in it to no small degree. Mr. John Newton, in a recent address at Faversham, England, said:

"The universal testimony of those who know both countries is that the workman of America is more sober. . . . He neither wastes his physical nor his material resources in the public-

house to anything like the extent our workmen do. . . . All men who look thoughtfully ahead and study tendencies, trying to read the future by the past, are warning us that we are being outstripped in the competition of nations by our more sober sister civilizations. It is not the wild rhetoric of brainless fanaticism, but the sober truth, to say that our great position among the nations of the earth is more menaced by our frightful drinking habits than by anything else. . . . These habits, largely fostered by ignorance, gravely threaten our commercial supremacy, our national future, our highest and best interests."

"The Americans," says a British writer, commenting on the reports of the Mosely Commission in one of the English weeklies, "have recognized that alcoholic liquor is not one of the things which tend to industrial supremacy and national progress, and, as the Mosely reports show, many manufacturers prohibit its use within their works, though the sale of liquor may not be prohibited in their states. . . . Would that the employes in the great industries of this country did but consult their own interests by vetoing liquor as so many of our railway employes and so many of the managers and workers in the great industries of America have done. Here at hand lies a priceless opportunity to be enjoyed by them without cost and with immense profit. One may fervently hope that, as a result of the Mosely inquiry, the workers of the United Kingdom will determine that in the struggle for industrial supremacy their part at least shall be performed free from the heavy handicap of the drink traffic."

AMERICA'S METHOD OF SECURING SOBRIETY

The Mosely Commission, unfortunately, evidently gave but passing consideration to the question how it happens that the American employer and workman in so many industries "veto liquor" and thus greatly contribute to the progress of the nation.

But an article in the *London Standard* of September 1, 1902, answered this question in advance as follows:

"The effects of intemperance upon national efficiency have nowhere been so closely studied, and so thoroughly acted upon as in the United States, and nowhere else have the good results of abstinence been so closely demonstrated. We have all been made familiar with the power of American capital, the stress of American competition, and the superiority of the American workman; but there has been great reluctance in this country to acknowledge how much of these are due to a system of national education in scientific temperance in its bearing upon national efficiency."

"By the laws of all the states, instruction in scientific temperance is required in the public elementary schools. Under these laws are the more than 22,000,000 children of school age. And all this has taken place within the past twenty years. *The result is that the properly instructed are entering into their inheritance of commercial supremacy in the world.*"

"In this," said Mr. Newton in his Faversham address, "as in so many other good things, our brothers across the Atlantic are far ahead of us, and if we want to see how this essential teaching can be imparted, we must, in John Bright's phrase, turn our eyes toward the region of the setting sun. There we shall find that Brother Jonathan, with his usual acuteness, has grasped the necessities of the situation, and with his usual alert energy has devised means to meet these necessities."

"In the United States, scientific temperance teaching is practically universal in the elementary schools. It was there early recognized that the 'star of hope for the temperance reform stands over the school house' The effects of this teaching are seen in many ways, and they are all good ways."

Here, then, is one of the keys to the situation. For the past ten or fifteen years, the American schools quite universally have been teaching their pupils that alcohol injures mental and physical working ability, and employers and employes, with what Dean Alderson of the Armour Institute of Technology calls "the native American tendency to apply knowledge as soon as acquired," have been quick to make a practical application of the facts thus learned. Hence the American workman, because of his sobriety, becomes a profitable producer, to the pecuniary advantage of both his employer and himself.

These British reports and comments are significant and encouraging; significant as indicating the trend of thought in Europe today toward a comprehension of the relation of sobriety to national prosperity and greatness, and of temperance instruction as necessary to securing that sobriety; encouraging, because it is but giving honor to whom honor is due that the hundreds of men and women throughout the United States who have labored long and earnestly to secure this instruction in the schools, and the teachers, who have been faithfully training the children under their care to intelligent sobriety, should have the results of their work thus recognized as a potent factor in the nation's moral and material greatness. Such recognition should give new inspiration in teaching the reasons for obeying the laws of health and also those laws which relate to the nature and effects of alcoholic drinks and other narcotics.

NO MONOPOLY OF TEMPERANCE EDUCATION BY
AMERICA

America has no patent on this educational method for increasing her commercial success, and no copyright on the truths which any other nation may teach its children with the same beneficent results. But in the effort to secure these results, certain absolutely essential conditions should be kept in mind:

First, that because of the nature and effects of alcoholic drinks the physiological reasons for abstinence as revealed by modern science constitute the teaching that will prevent alcoholism.

Second, that these truths to be effective must be incorporated with the study of other physiological and hygienic facts, and thus taught to all pupils in all schools with the same systematic thoroughness as are other branches.

A third condition was well stated by Mr. John Newton in his address already referred to, and his words are applicable to all nations as well as to England:

"In view of the enormous evils which afflict us as a people because of our heavy consumption of alcohol, it is necessary in the best interests of the state, both present and future, that scientific teaching as to the effects of alcohol on the human frame should be given in all elementary schools, under the control of the Education Department and at the expense of the State.

THE RESPONSIBILITY OF THE PRESENT FOR THE
FUTURE

"The future," Mr. Newton continues, is to the people who have the greatest endurance, skill, alertness and grit, with determination and energy to use their powers to the best advan-

tage. It is brains which tell in the industrial struggle that is upon us, not brute force merely. And drink muddles brains, fuddles brains, drowns brains, both of the individual and of the nation. . . .

"National decline is brought about by corruption of morals, decay of energy, loss of civic virtue and waste of national resources, and no good citizen can deny that all these things are encouraged and fed by indulgence in alcoholic beverages.

"Therefore, whatever the personal habits of the future citizen may be, whether or not he shoulders his share of responsibility for the continuance of this pernicious custom, it seems clear, in view of the vast issues involved, that it is the duty of the present generation to see that the future generation starts upon its journey

equipped with knowledge exact and definite. The responsibility for its use or non-use will be theirs; we shall have discharged ours. . . . The future is with them; it is not with us. We are passing; they are coming! Let us equip them



"This city now doth like a garment wear the beauty of the morning: silent, bare. Ships, towers, domes, theaters and temples lie open unto the fields, and to the sky, All bright and glittering in the smokeless air."

for the battle that is swiftly coming upon them, a battle which threatens to be sterner than ever ours was."

"The end lies hid in future victory
Won by the faithfulness of man to man."

Wednesday evening, September 30, the Hyde Park Woman's Christian Temperance Union tendered Mrs. Hunt a reception which was of special personal interest, inasmuch as Hyde Park was formerly her own home town and as such the birthplace of the present temperance education movement. Twenty-five years ago, by vote of the school board of Hyde Park, Scientific Temperance was included in the list of public school studies for that town, which was among the very earliest, if not the earliest town to make such provision for its children.

MODERN CIVILIZATION AND THE BATTLE AGAINST ALCOHOLISM

BY DR. JOHN BERGMANN

ALCOHOLISM is an international evil characteristic of modern civilization. Ancient times knew of it only sporadically.

It is therefore a problem of our times to raise the standard of civilization by removing this evil. References to olden times and the great number of dead and gone men of genius who took alcohol and were not abstainers are valueless. They lived in times that had not the same dangers and social problems that ours have.

As long as alcohol was scattered only here and there as a social means of deterioration, it was possible to fight it with exhortations to moderation merely. But today, when from several reasons,—change in methods of production, greater ease in means of communication, development and growth of the cities, the increasing number of unmarried, homeless men, etc.,—the daily and universal consumption of alcohol has risen enormously, a radical reaction must be organized not only against drunkenness but against the custom of drinking which destroys civilization.

In the history of the movement we find the radical method of total abstinence standing the test; examples from Scandinavia and the Anglo-Saxon countries prove it.

If alcohol taken in moderation were of any good to normal man, this principle of sacrificing something for the good of mankind would savor of asceticism. But it is not scientifically and experimentally proved that alcohol taken even in the smallest quantities can do any good. Nobody loses anything by total abstinence.

Not even pleasure in life and stimulus to the mind?

No, not even that.

In all normal cases it is not alcohol that makes one gay and pleasant but the accompanying circumstances under which alcohol is generally taken. Examples of highly intellectual society, of the greatest stimulus to the mind, and of the heartiest gaiety in America and Sweden are mentioned. Indeed, comparison with alcohol-taking society will be very unfavorable to the latter.

The lecturer tells of experiences in Sweden in the realm of art, poetry, and esthetic culture, since abstinent esthetic culture has grown steadily up beside the old culture of Swedish punch which unfortunately still thrives.

Resume of paper read before the Ninth International Anti-Alcohol Congress, Bremen, Germany, April, 1903.

THE HEART OF THE WOODS

I HEAR it beat in morning still
When April skies have lost their gloom,
And through the woods there runs a thrill
That wakes arbutus into bloom.

I hear it throb in sprouting May—
A muffled murmur on the breeze,
Like mellowed thunder leagues away,
Or booming voice of distant seas.

In daisied June I catch its roll,
Pulsing through the leafy shade;
And fain I am to reach its goal
And see the drummer unafraid.

Or when the Autumn leaves are shed,
And frosts attend the fading year,
Like secret mine sprung by my tread
A covey bursts from hiding near.

Alert of life, of fervent wings,
A compact source of feathered power,
Their drum is music in the spring,
Their flight is music every hour.

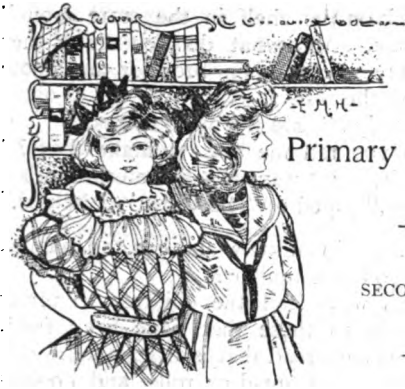
—Selected.

ALCOHOL AND CHILDREN

BY DR. DEMME

Parents often labor under the delusion that alcoholic drinks are good for children and act as tonics. Mothers will put drops of brandy into the milk with which their children are fed, increasing the quantity with the age of the recipient. In the illness of children the same is given to meet disturbances of the stomach, or to increase growth and development, without taking the advice of any medical man as to the wisdom of the practice.

This is all erroneous. The excitement of the central nervous system under alcohol, excitement which seems to be a relief to weariness and to give strength, is nothing more than temporary at best, and is injurious, causing in fact symptoms of alcoholic poisoning, abnormal excitement, ending, in extreme cases, in convulsions succeeded by exhaustion of body and mind, and inducing a kind of paralysis. Many cases of stomach and gastric catarrh in children followed by emaciation and debility are due to the early administration of alcoholic drinks; and impediment of growth from the same cause is thereby produced. The most serious derangement is that of the nervous system, and the development in the young, under the influence of alcohol, of what is known as nervousness, to which is added the moral paralysis with which the habit of alcoholic drinking smites its victims in the very springtime of life.



Primary Lessons

SECOND YEAR

UNWHOLESOME FOOD AND DRINK

THERE is abundant evidence that the food one eats has a direct influence upon his character as well as upon his growth and mental development.

Before condemning a stupid or unruly child too severely, find what he has had for breakfast, or what he has been eating between meals. One boy of almost ungovernable temper was found to be passionately fond of meat, eating it in large quantities three times a day. After putting him on a different diet his disposition underwent a marked change for the better.

Five brothers, ranging in age from seven to thirteen years, were noticeably stunted in growth. They were healthy children, but smaller and shorter than any of their mates. They came of good family, and were well brought up, but the mother did not understand cooking, and their food was unnutritious and poorly prepared. The middle boy went to live with an aunt in the same town, where he had an abundance of good food. At the end of a year he was taller and larger than any of his brothers, and is the only one of the family likely to reach average height.

Such instances can be multiplied almost indefinitely from the experience of any teacher who is familiar with the home life of her pupils. The character and preparation of food in the average family is far from what it should be, but when to the ills thus entailed is added the abuse of the child's digestive organs by constant eating between meals and visits to soda water fountains, by gum chewing, the use of tobacco, and possibly of beer or some other alcoholic liquor, it is little to be wondered at that so few reach old age or even middle life without loss of health or deterioration of brain power.

The school is doing much to bring about a change for the better through its universal teaching of physiology and hygiene. It must do more, remembering that the home is educated through the child.

Those who have raised bees know that if a larva is fed on a certain kind of food it will develop into a queen bee. Put on a different diet, it becomes a worker. The same principle holds in child life. Give children what they should eat, at the proper time, and in suitable quantities, and the nobler parts of their natures will quicken into being. Deprive them of suitable nourishment, and every power will be dwarfed and crippled.

The child's first lessons on food will naturally be positive, teaching him what to eat, and giving necessary hints as to the process. But he must also learn what to avoid, and the lessons which follow have been prepared with special reference to this end.

(1)

UNRIPE FOOD

Have both ripe and unripe apples or other fruit on the table when this lesson is to be given, also a raw potato and one that has been baked.

Hold up an apple of each kind where the children can see them. Let them take the apples in their hands and feel of them. Are the two alike? Why not?

Lead them to see and tell about the difference in color and hardness. What makes this difference?

If no one can tell, show the two potatoes and ask the same questions about them. Help the children to put into words what probably all will know, that the heat of the oven has made the baked potato softer than the other, and of a darker color.

Tell them that it is heat, too, that ripens the apple, but not from the oven. Where does it come from?

Perhaps they have never thought before of the sun as a cook. Tell them that it is one for all that, the very first cook in the world. Long before anybody thought of boiling or baking food to make it better to eat, the great warm sun was softening the fruit and ripening it into delicious food.

Who likes a baked potato better than a raw one? You all do, and so do your stomachs. They can use a baked potato just as it comes to them, but they would have a hard time trying to get anything out of a piece of raw potato.

They find it just as hard to try to do anything with green apples or any kind of unripe fruit, if you are so foolish as to give them any such thing.

They can not use it, but they try so hard to do so that they get tired and sick. Then you have a pain in your stomachs to remind you to be more careful next time.

POINTS TO REMEMBER

The sun is the first cook.
 It ripens the fruit and makes it good to eat.
 Hard, green fruit is not good for any one.
 The stomach can not use it.
 It hurts the body instead of helping it.
 We will eat only sweet, ripe fruit.

(2)

BADLY COOKED FOOD

In the most progressive schools luncheon is now provided, either free or at a low price. This is the ideal plan. In other schools, the teacher should know what luncheon the children buy or bring from home, and be ready to suggest changes where she finds it is poorly chosen or badly prepared.

Tact must be used in this not to wound the feelings of any child, or lead him to criticise his home surroundings. It is quite possible so to present the subject that parent and child alike will feel proud of the newly acquired knowledge and eager to put it into practice.

If pie appears often in the children's lunch baskets, tell a story to interest them in some other kind of dessert.

BETTER THAN PIE

Theodore's big brother and sister went to school, but he was not old enough yet. If he had not had such a nice mother, he would have been pretty lonesome; but mamma was the best kind of a playfellow.*

Everything she did, Theodore helped to do, too. When she washed the dishes, he had a little pan and washed his own. When she set the table he put on the knives and forks.

One day mamma was paring apples, and Teddy boy was handing them to her.

"Are you going to make a pie?" he asked.

"No, these are for apple sauce?" mamma told him. "Pies are not very good for people. The crust is hard to digest and our stomachs are better off without it.

"Bring me a pie plate and I will show you what is better for little folks, and big ones too for that matter."

Theodore brought the plate, and mamma picked out the five prettiest apples she could find. One each for Theodore and Bryan and Carroll and Everett and Nelle.

Then she took out the cores, sprinkled sugar in the holes that were left, poured a little water in the bottom of the dish, covered it up, and set it in the oven to bake.

By suppertime the apples were done and the children had them with their bread and butter.

"Can't we have some to take to school tomorrow?" asked Bryan. "They are lots better than pie."

"Go look on the shelf in the store room," said mamma. And what do you think they found? Five more, each browner and more sugary than the rest.

"Oh, goody!" said five little voices.

"Won't you tell me how to make them?" asked Nelle. "I want to tell the other girls."

"I know," piped up Theodore. "I helped."

How many of you know and can tell mamma when you go home tonight?

In similar ways lead the children to prefer broiled meats to those that have been fried, light, well baked bread that is at least a day old, or dry toast, to hot bread or rolls, and cookies or plain cake to doughnuts or rich desserts of any kind.

POINTS TO REMEMBER

It is better to eat fruit fresh, or baked, or stewed, than made into pies.

Pie crust is hard to digest.

All kinds of rich foods are bad for a child's stomach.

They give it too much work to do.

Broiled meat is better than that which has been fried.

Hot bread is not so good for us as that which is a day or two old.

(3)

DRINKS THAT DO THE BODY LITTLE GOOD

The body craves liquids even more than solid food, hence the question, What shall one drink, is most important. Moreover, it must be answered early in life, the time when appetites are formed.

It is then an easy task to accustom children to use water to quench their thirst. When this habit has become fixed they will rarely ask for other drinks, at least until the critical age of childhood is well past. Stories may be effectively used to give right ideas in this matter. For instance,

JANE AND VIDA

"What round, rosy cheeks your little girls have," people used to say to Mrs. Barr. "They don't look as if they were ever sick."

"Yes, Jane and Vida are healthy," their mamma would reply, "and I try to keep them so. They have very plain, simple food to eat, and water or milk to drink, so their stomachs never get out of order."

Every night and morning Jane and Vida go to the neighbor's for milk and bring home a great foaming pailful. Then they have all the bread and milk they can eat for breakfast and supper.

It tastes so good they seldom want anything else, but sometimes when they see mamma drinking tea or coffee they want some too.

*See picture on opposite page

Mrs. Barr always shakes her head.

"When you are old enough to do the same work I do," she tells them, "you can have the same things to eat and drink, but not till then," and that has to end the matter.

When she has time she explains that tea and coffee are never good for little folks. They make them feel dull and stupid. Sometimes they give children the headache, or make them cross and nervous.

Once in a while Jane or Vida asks for money to buy lemonade or soda water.

"The other girls have ice cream soda every day," Jane said once. "Why can't we?"

"Because it is not good for little people to have such things often," their mother would tell them. "You must have food now that will make you grow. When you are as old as I am you can't grow any taller if you want to."

Some days, when it is very hot, mamma lets them have lemonade or soda water, but they know that water is the best drink for every day.



"He would have been pretty lonesome if he had not had such a nice mother."

POINTS TO REMEMBER

Tea and coffee are not good drinks for children.
They may make a child cross and nervous.
They make it hard for him to learn in school.
Lemonade and soda water taste good on hot days.
Too much of such drinks are not good for the stomach.
Water is the best drink for every day.
It is better to put water on the ice to cool, than to put ice into drinking-water.

(4)

DRINKS THAT HURT THE BODY

A teacher who visited schools in the poorer quarters of London noticed that many of the children could not keep awake through the morning session. Despite every endeavor to keep them interested, the little heads dropped on the desks, and the children were soon so sound asleep that it was difficult to arouse them.

"They are so stupefied with beer," was the explanation given, "that they can not keep awake, and of course they can not learn."

While such a state of affairs would seldom be found in this country, the immigrant quarters of our large cities can show many children, even in the primary grades, who know the taste of beer or wine or cider and have begun the use of such liquors.

Unfortunately, too, children from better homes early meet the same temptation in one form or another. Hence, school instruction on the dangers involved can not be given too early in the course.

LESSON TALK

Bring into class a dish of ripe fruit, including especially apples and grapes.

Ask the children to name the kinds of fruit they have eaten. Where does fruit come from? What does it grow on? Sketch on the board an apple tree or a grape vine.

How do we know when fruit is ripe and good to eat? Tell some of the ways in which we use ripe fruit. Why is it good for us?

Remind the children how cool and refreshing fruit is in warm weather. Tell them that in very hot countries people live on fruit almost entirely, and that some fruit is needed by the people of every country.

But sometimes people press out the juice of apples or grapes or other fruit and use it for a drink after it has stood for some time. Is such juice just as good as the fruit itself?

Tell the children of the changes that take place in fruit juices after these have been pressed out and left to stand in a warm place.

They grow darker colored.

Part of the sugar which makes them sweet and good is changed into alcohol.

Alcohol spoils fruit juices and makes them unfit to drink.

Alcohol is a poison.

A very little of this poison as found in fruit juices will not kill us, but it may make us want more and more until we can not let such drinks alone.

POINTS TO REMEMBER

The juice in ripe fruit is good to eat.

After it has been pressed out and stood awhile it is not good to drink.

It has been changed to cider or wine or some other liquor.

There is a little alcohol in all these drinks.

We will not touch any liquor that has any alcohol in it.

Then it will never hurt us.

AUTHORITATIVE QUOTATIONS

DIET FOR A CHILD FROM THREE TO SIX YEARS OF AGE

Breakfast.—Cracked wheat, wheatena, hominy, oatmeal, each cooked three hours. They may be served with equal parts of milk and cream and a little sugar. A soft boiled egg, omelet, scrambled egg, chop, bread and butter, bran biscuit, a glass of milk, one orange, one half dozen stewed prunes.

Dinner.—Plain soups of all kinds. Rare roast beef, steak, poultry, fish, potatoes stewed with milk, or baked. Peas, beans, strained stewed tomatoes, mashed cauliflower, spinach, asparagus tips, bread and butter, a cup of milk. For dessert—Rice pudding, plain bread pudding, custard, tapioca pudding, stewed prunes, baked apple with cream. Raw apples, or uncooked pears and cherries may be given after the fourth year.

Supper.—Rice and milk, farina and milk, bread and milk, scrambled egg twice a week, custard and corn starch, each once a week, ice cream once a week, bread and butter, a glass of milk. When a child has eggs for breakfast they should not be repeated in any form for supper. Red meat should be given but once a day. When the child has a chop for breakfast, he should have poultry or fish for dinner.—CHARLES G. KERLEY, M. D.

THE CHILD'S FOOD

At what age should a child be given food suitable for an adult?

Were the question changed in its phraseology to read "such food as is usually eaten by adults," the proper answer would be "Never." If it is a crime to destroy a delicate and irreparable piece of machinery, very many parents are criminals—not knowingly and intentionally, perhaps, but none the less responsible for the serious mischief which has been wrought upon their offspring.

Discussing this matter, a physician recently said: "The foundation of digestion, good or bad, is laid in the early years, and many of the ills of later life might almost be traced directly to improper food in childhood's days. As a basis for a child's food, whole-wheat bread and milk, and cream are best, the bread home made. Occasion-

ally white bread toasted may be used, or light milk biscuit as a change. Milk and eggs may be used in abundance, but meat should be omitted altogether until the child has the proper teeth for grinding it. There are many good cereal breakfast foods to be used with milk, but one should be economical with the sugar. Too much of it is harmful, causing fermentation, which produces cramps, colic, and dysentery."—*Good Housekeeping*.

ALCOHOL VERSUS FOOD

Food nourishes the body. Alcohol can, at the best, be nothing more than a "whip," as Carpenter calls it. Food warms the body, alcohol radiates more heat than it generates. Food replaces tissue waste and aids growth, alcohol does neither. Food builds up, alcohol tears down. Food is Nature's means to sustain life, alcohol is protoplasm poison, and destroys life. Food makes a normal man, alcohol makes him abnormal. Food does not produce degenerative changes, disease and death; alcohol does all and more.—J. W. LONG, M. D., in the *Carolina Medical Journal*.

ALCOHOL NOT NEEDED BY THE BODY

Alcohol contains neither albumin nor any other substance either present in the animal organism or arising by chemical changes in the body and replacing a part of the same.—A. BAER, M. D., Berlin.

DEFINITION OF A FOOD

It is the deliberate conclusion of Dr. Winfield S. Hall, Professor of Physiology in the Northwestern University Medical School, and one of the most scholarly and brilliant of the younger physicians of the day, that if people generally had had a clear conception of the exact meaning of the words *food* and *poison*, no credence would have been given to Professor Atwater's assertion that alcohol is a food.

Keep the definition of these words well to the fore in every lesson on foods. Write them on the board, and drill, drill, drill, until they are a part of the working knowledge of each child. Test every substance popularly considered as a food by the definition thus given, leading the children to decide whether all substances which give heat or energy to the body belong properly in this list, and if not, why alcohol can not be considered a food.

A *food* is any substance whose nature it is when absorbed into the blood to nourish the body without injuring it.

A *poison* is any substance whose nature it is when absorbed into the blood to injure health and destroy life.

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FOUR PART HARMONY

June's high soprano, Autumn's alto deep,
Winter's strong bass, and April's tenor clear
These are the tones that make our pulses leap,
This is the mighty quartet of the year.

--M. WOOLSEY STRYKER in the *Independent*.

WHAT THINK YE OF ALCOHOL

WHAT think ye of Christ, was the question on which, at the opening of the Christian era, its future turned. Nations can not survive the vicissitudes and shocks of time unless founded on the principles of Christ, truth, purity, brotherly kindness, love, honesty in dealing, and kindred virtues. Hence the nations that nineteen hundred years ago despised, crucified, and rejected Him have lost their places in the history of the world.

What think ye of alcohol, the greatest despoiler of Christ's kingdom in human hearts, is the question on which the future of the twentieth century turns; because alcohol is the destructive enemy of every virtue upon which the perpetuity of individual and national life depends. Therefore the race or people that clings to its beverage use thereby mortgages its future to the fate of the perished nations.

The record of alcohol is before the world. As a cause of demoralization, crime, poverty, misery, and madness, it leads all other causes combined. The progress of civilization in all nations halts before it. Shall that progress be thus baffled and set back, is the pending question. What the people of the twentieth century think and do with alcohol depends upon what they are taught in childhood, before they become its victims, concerning the real nature of this great destroyer, and concerning the effects which consequently may be expected to follow its use. Thus, by no circuitous process of reasoning, we reach the relation, teacher, of your temperance physiology lessons to the future of your pupils, your town, city, state and nation,

and more than all, your relation to the progress of the world.

OUR OBLIGATION

How can you meet this obligation?

The object of this study is the formation of such physical habits in the young as will result in strong, sober, upright, achieving lives. The formation of habit begins with the earliest years of the child's life, and habits earliest formed are the most lasting, as well as the most difficult to correct if correction is needed. Hence this instruction of the school to be effective must begin with the child's first school years and continue as a progressive branch through at least one term of each of the primary and grammar years and the first year of the high school.

A course of at least three or four lessons per week for ten weeks of each year makes in all only 270 or at most but 360 lessons in the whole subject of physiology and hygiene, including a due proportion of temperance matter distributed through nine years. With a good course of study indicating the matter to be taught each year, and well graded text-books in the hands of pupils who have books in other studies, there is no unnecessary repetition in this plan of study, while the pupil thus gets each year the guiding and restraining influence of health lessons that meet the needs of his progressive development.

To omit the study any year below the second year of the high school is to omit just the instruction that the pupil needs in that particular year and that he was not mature enough to understand the year before.

THE RIGHT STAND

The National Woman's Christian Temperance Union at its last annual convention passed the following resolution with only three dissenting votes:

"Resolved that we stand committed to the principles and practice of compulsory scientific temperance instruction for all pupils in all public schools of this country.

"We rejoice that this study is now universally mandatory in the United States, and urge our organizations everywhere to resist every effort to weaken the laws that require it; to work for good well graded text-books on this subject in the hands of pupils who use books in other subjects; and to oppose books that fail to teach total abstinence as revealed by modern science."

The British Woman's Temperance Association, affiliated with the World's Woman's Christian Temperance Union, in June last in convention in London unanimously resolved:

"Whereas, we believe that compulsory physiological temperance education for all pupils in all schools is the hope of the temperance reform, therefore

"Resolved, that as soon as it shall be judged expedient by the Executive Committee, we will petition Parliament for the passage of a law that will make this study mandatory for all pupils in all schools under government control."

The World's Woman's Christian Temperance Union met June, 1903, in beautiful Geneva, the home of Calvin "who studied law by day, and the Bible by night until zeal for the truth of God became the passion of his life." His words, "If God be for us who can be against us," may well be the motto of those who, like the Woman's Christian Temperance Union, are seeking the world's reformation from the scourge of the twentieth century—alcohol. This Geneva convention unanimously passed the following resolution:

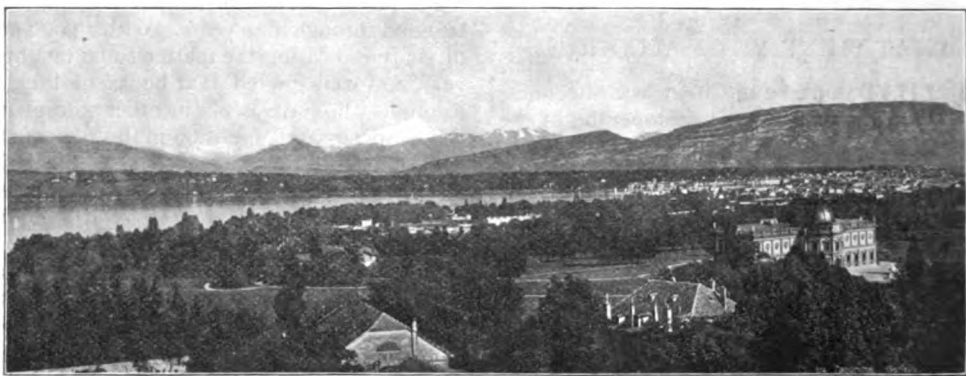
"Whereas, both reason and experience prove that the universal education of the rising generation in the physiological reasons for obedience to the laws of health, including those that teach abstinence from alcoholic drinks and other narcotics, is the hope of the temperance reform, therefore be it

"Resolved, that we urge upon the governments of the world the enactment of laws that require the foregoing study for all pupils in all schools under government control."

that they, the Committee of Fifty, wish the children of this country to be taught

1. That alcohol is in a certain sense a food.
2. That it is not a poison except in large quantities.
3. That moderate drinking by grown up persons is not very dangerous.
4. That systematic instruction on the action of alcoholic drinks, as a part of hygiene, should not be given except to advanced pupils, especially in the high school.

These two volumes of the Committee of Fifty will be exhaustively reviewed in a later issue. Here we will only say that both experience and science have proved alcohol to be the food of death and of the bottomless pit, that it has poisoned the life springs of individual and national life, that its moderate use has led to the immoderate use represented by the mournful procession that goes each year into the hopeless



"Here, centuries ago, Geneva rose, cradled in storms, until the iron will Of her great preacher bade the waves be still."

Thus it will be seen that the heart of this great, world-wide organization is set steadfastly toward the instruction of *all* the children of all lands away from alcohol and other narcotics.

As this body of women has shown achieving ability in translating resolution into action, there is strong reason to hope and believe that alcohol will be dethroned from its place as the destroyer of individuals and nations.

THE COMMITTEE OF FIFTY

A COMMITTEE, called the Committee of Fifty, was formed ten years ago to investigate the physiological aspects of the liquor problem. They have just published the report of their experiments and other investigations in two volumes of 800 pages in which they give 134 pages to scientific temperance instruction in the public schools. The gist of it all is

graves over which stands the epitaph, "No drunkard shall inherit the kingdom of heaven."

To take this study, with its warning lessons against alcohol and other narcotics, from the lower grades of our public schools would be to take it away from the overwhelming majorities of our future citizens, and this would be a direct blow at the nation's life, for a self-governing people must be a sober people, and sobriety, as we have seen, depends upon early education that warns against alcohol and other narcotics.

A man in Arabia 1200 years ago taught that "paradise will be found in the shadow of the crossing of swords," and that "for the vanquished there must be only the Koran, tribute, or death." The slaughtered Armenians of seven years ago and the bleeding Macedonians of today are the legitimate fruit of that teaching. The teaching which this Committee of Fifty desires would invite a worse death for individuals and nations, that of the debauchee.



Grammar Lessons

FIFTH OR SIXTH
YEAR

THE TOBACCO HABIT

AMERICA has been called a nation of hero-worshippers, and true it is that no other people are more responsive to the influence of a great personality.

Unfortunately, however, such influence is likely to be short-lived. A scholar, an inventor, a merchant prince fires the ambition of a youth to be and do likewise, but when the boy finds that such achievement is won only by hard work and rigorous self-denial, his enthusiasm cools. He begins to wonder, whether, after all, the success he has dreamed of is worth the effort.

Just here, though he knows it not, is the danger line. If he fancies that he can neglect a single opportunity for improvement, or can handicap himself with even one bad habit without failing in just that degree to realize all his possibilities, he is making an irretrievable blunder.

Like the victorious athlete in the Olympic games, the youth who would come off conqueror today must lay aside every weight and run with patience the race that is set before him; but having done this his reward is sure. Not only is a measure of material success certain to such an one, but he will have won also the sound body and clear brain which are the accompaniments of right living.

The school shares jointly with the home the responsibility of shaping the child's habits. In some cases, indeed, it must carry on the work alone, even to the undoing of mischief that has already been wrought. Especially is this true of the tobacco habit. Cigarette smokers have been found among children not yet old enough to go to school, and the difficulty of successfully combating the evil grows with each advancing grade.

Our best weapon is thorough knowledge of the facts. Every child must know that whatever may be true of the adult, he can not use tobacco in any form without imperiling health, brain power, and character. To set forth these

facts as clearly and convincingly as possible is one of the most important duties of the school, and the degree with which it does so will be the measure of its success.

HINTS FOR THE CLASS ROOM

Find whether any of the pupils in this grade have already formed the tobacco habit. All such will need the individual help of the teacher, with all the tact she can summon to her aid, before this habit can be broken. But aside from such personal work with the few, all in the class need instruction as to why they should not begin the use of this harmful drug.

Reproduce on the blackboard the sketch shown on page 25, and write above it in large letters the words, *Closed doors*.

Ask what a door is for. Have the word looked up in the dictionary. Develop the thought that a door leads somewhere, that it is meant to be an entrance to something. Ask what we mean when we speak of the door to success, or the door to fame. Name some of the doors that we should all like to have swing open to us. Perhaps the one that we should want most of all to be able to enter is

THE DOOR TO HEALTH

Write the word, health, underneath the first door sketched on the blackboard. Why does every body want to be healthy? Tell some of the pleasures a well person enjoys that are denied to sick people. We may think of everything we can do to keep ourselves well as a key to unlock the door of health to us. Name some of these keys.

There are other things that can close this door to every boy and girl so tightly that they can not get it open again. What are they?

Cigarettes will probably be named as one thing. Select this answer for special discussion, and write the words, *closed by tobacco*, on the blackboard over the sketch of the first door.

How do cigarettes close the door of health to young people? Put this question to the class as a whole, and make a list of the answers given, which should include such well-known facts as that cigarettes can stunt growth, weaken the body, make the hands tremble, cause tobacco heart, eye trouble, etc. Give each of these topics to one or more pupils in the class, and ask them to find all the passages in their physiologies that explain how tobacco can injure the health in these ways.

Have these passages read aloud, giving the class, meanwhile, opportunity to ask questions about any point that is not clearly understood, and also to give such additional information as they can.

When all known facts, or those which can be easily proved, have thus been brought out, have the books closed, while the pupils tell in their own words how tobacco can close the door of health to young people. Explain in this connection why it is especially bad for a growing boy to use tobacco.

THE DOOR TO SCHOLARSHIP

Write the word, scholarship, under the second drawing on the board. This door also is represented as closed to the boy who smokes. Why so?

Ask the class to think of boys they know in their own town who have gone through the grades and graduated from the high school. How many of these used tobacco all through the grammar and high school? How many did not? How many cigarette smokers do you know who do really good work in school?

Refer the class to their physiologies for reasons why the cigarette smoker seldom graduates, and is usually near the foot of his class. Why is the boy who constantly smokes cigarettes likely to have a poorer memory than boys who do not smoke? Why does he find it hard to learn? Why is he usually duller and slower than others in thinking out any kind of a problem?

Not every boy or girl means to become a great scholar. Many have to leave school early to go to work, but all young people need some education. They can get only the poorest and meanest kind of work without it, while the more they know, if they can put their knowledge to practical use, the more valuable they are.

Besides shutting the door of scholarship on himself, then, the boy who smokes cigarettes is keeping himself out of another door,

THE DOOR OF BUSINESS

If you were through school and ready to enter some kind of business, where could you find an opening if you gave cigarette smoking as one of your recommendations? Name the kinds of business that you know of which refuse to take boys, even on trial, who use cigarettes. How many such are there in your own town or city?

Why is it that the boy who smokes is not wanted in business? Ask each pupil to find out by asking some business man. Tabulate the answers thus obtained, and refer the class again to their physiologies for explanations. Let them find in this way why the cigarette smoker, besides being undersized, having weak muscles, and feeble brain power, is habitually lazy, likely to be untruthful and dishonest, and can not be depended on to do his work.

In order to explain why the cigarette smoker is so inferior in all these ways to other boys, the

class at this point must learn the true nature of tobacco.

Where does it come from? If we were to separate it into its various parts what should we find it made of? Which of these ingredients is harmful? What is nicotine? What is a narcotic? How do narcotics in general affect a person.

How does nicotine hurt the body? Ask each one in the class to name an organ of the body which it has the power to harm and tell how it can injure this part.

How does nicotine affect one's will and his self-control? Why is it that it is so hard to get rid of the tobacco habit after it has once been formed? How do these narcotic effects of nicotine explain why the door to business success is closed to the boy who uses tobacco habitually?

AUTHORITATIVE QUOTATIONS

THE DEADLY CIGARETTE MUST GO

Z. F. Stevens gathers the testimony of various organizations that close their doors against cigarette users:

1. Athletic clubs. "Cigarettes are prohibited to all athletes in training for our competitive games (numerous schools and colleges). "No boy can be a fine athlete, football, baseball, or basket-ball player, runner, jumper, or gymnast, who weakens his heart and poisons his blood by cigarette smoking."

2. Business college. "This is our experience in teaching more than fifty thousand young people: Cigarettes bring shattered nerves, mental weakness, stunted growth, and general physical and moral degeneracy. We refuse to receive users of tobacco in our institution." HENRY C. AND SARAH A. SPENCER, Spencerian Business College.

3. Union Pacific railroad. Similar order.

4. Omaha Schools. "No two ways about it. Either let cigarettes alone, or go without an education. The use of cigarettes impairs the faculties of the pupil, and sooner or later will ruin him."—Superintendent of Omaha Schools.

5. Swift & Co. (packing house, Chicago) and other Chicago business houses employing hundreds of boys have issued this announcement, or similar ones: "So impressed with the danger of cigarette using are we that we will not employ a cigarette user."

6. Marshall Field. Similar announcement.

7. Life Insurance companies (some). "Cigarette users are bad risks."

8. Lehigh Valley Railroad bars cigarette smokers.

9. United States army positions. "Thousands of young men rejected by medical examiners because they had 'tobacco heart,' the re-

sult of cigarette smoking." In one examination for West Point one fourth of the candidates were rejected. Cause, 'tobacco heart' from cigarette smoking."

10. United States naval schools. "Out of 412 boys examined by the naval enlisting officer (Peoria, Ill.), only 114 were accepted. Of the 298 rejections, the greater number were on account of weak hearts, and in the majority of cases this was caused by cigarette smoking."

11. Carson, Pirie & Scott, Chicago, bars cigarette smokers as employees.

12. Chicago, Rock Island, and Pacific Railroad bars cigarette smokers.

13. Central Railroad of Georgia forbids cigarette smoking.

14. High schools. "I will not try to educate a boy with the cigarette habit. It is wasted time. The boy couldn't learn. Trying to teach him would be like talking to a block of wood. Cigarettes are poisonous. A boy who smokes cigarettes can't learn anything. His mental faculties are blunted. His physical being is wrecked." —

PROFESSOR WILKINSON, School Principal.

"The poor fellow was a complete wreck, (a high school boy). He could not get his mind on anything except cigarettes. He couldn't study, his eyesight was affected, he was laggard and pale, he was nervous and dejected, he couldn't remember anything longer than a minute, he was beyond redemption. He left school." — PROFESSOR COY, High School Principal.

"Boys who smoke cigarettes are always backward in their studies. They are filthy in their personal habits, tending to viciousness; they are hard to manage, dull in appearance. There is danger of such boys making weak and undesirable citizens." — PRINCIPAL W. S. STRICKLAND.

All these instances are from the school principals of one large city.—*Vermont Home Guards*.

ONE OF THE GRAVEST DANGERS OF THE CENTURY

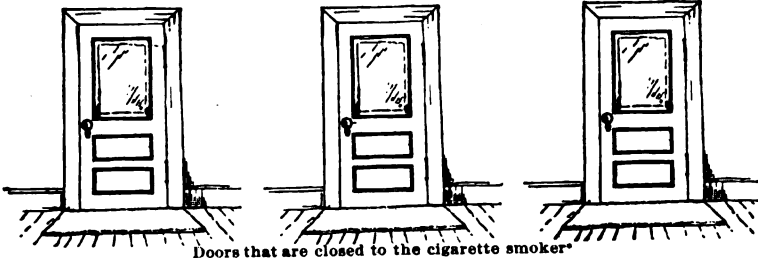
The numerous mental wrecks, youths who have come under my care during the past ten years, whose lives were failures, or who fill suicides' graves, impress me that today tobacco stands as one of the gravest dangers confronting the new century.—I. N. LOVE, *Journal American Medical Association*.

CIGARETTES THE MOST INJURIOUS FORM OF TOBACCO

The use of cigarettes has been condemned as not only the most injurious form in which tobacco can be used, but by some is considered a vice parallel to the use of opium or cocaine. While this is certainly an extreme view, there is no doubt that their habitual use occasionally leads to disastrous results. In the use of cigarettes the effects are produced by the complete inhalation of the smoke, and in their use the adulterants have more effect than in any of the other forms of tobacco. In the cheaper grades of cigarettes the lack of natural quality in the tobacco is made up by the use of the various adulterants mentioned; and where the indulgence is excessive, particularly in the growing young, the effects are most marked. Some effect is produced, too, from the inhalation of the burning paper, particularly if poisonous bleaching agents have been used in its manufacture.—G. W. CROOK, M. D.

The advent of the cheap cigarette has been

the chief cause of rapid spread of juvenile smoking of late. The Chancellor of the Exchequer in his recent speech, said:



"I am told of one manufacturer who makes two million cigarettes a day who hardly made any a few years ago." Thus it is not only that mere children are using tobacco but they are using it in the worst possible form. Moreover, whilst most adult smokers are inclined to exercise some restraint over their smoking, the young are too apt to rush into extremes. It is impossible to estimate the injury which boys are thus doing themselves. Surely something should be done and done promptly to put a stop to all this mischief.—R. MARTIN, M. D., Senior Surgeon, Anacoats Hospital, Manchester, England, in letter to *London Lancet*.

Cigarette smoking is worse than either the cigar or the pipe, but only for the reason that, the cigarette being milder tobacco, the smoker almost universally inhales the tobacco fumes, and when we realize the compotent parts of tobacco smoke and how direct the routes from the air vesicles of the lungs into the blood current we can appreciate the ill effect.—I. N. LOVE in *Journal American Medical Association*.

CIGARETTES LEAD TO CRIME

Physiology and observation both lead to the

*Courtesy of S. E. Geddes.

same conclusion, that cigarettes are harmful to the youth; that they not only dwarf the boy mentally and physically but make a criminal of him. The sale of cigarettes to a man of matured age might be excused upon the ground that he is capable of judging for himself, and if he desires to die by slow poison let him do so; their sale to young men should be severely condemned and prohibited, and to a boy under sixteen made criminal, as is the sale of any other poison.

Upon you must fall a great share of the work needed to create a sentiment in the minds of the young that will arouse them to the danger of the use of cigarettes. As your responsibility is great, your failure must, in proportion, do great injury. The time is coming when the practice of making money by injuring the young through the traffic in cigarettes must cease.

To you is given the future of our children; for more than 100 years the schoolroom has been the very life-blood of our nation; from it have come the men and women that have wrought the marvellous prosperity which marks the nation's career; within its walls have been developed the minds that have built our railways, steamboats, and telegraphs, and fashioned our policies as a republic. If the child is rightly guided but little fear may be entertained for his future.

If the teachers in this country would act in unison in this matter, cigarettes would soon disappear and the germ of American manhood would not be in danger of destruction from this source before it has had time to mature. I earnestly hope you will investigate this question for yourselves and fearlessly apply the remedy needed to right this great wrong. Slavery destroyed the man by reducing him to the level of the animal; cigarettes not only destroy the youth but endanger the immortal soul given him by a wise Creator. Will you not put your hand to the plough of enlightenment and purity and not turn back until this noxious growth is not only checked but destroyed?—HON. GEORGE TORRANCE, Gen'l Supt. Ill. State Reformatory.

WHY BOYS ARE INFERIOR TO GIRLS

Some striking effects of cigarette smoking upon school boys is given by the "*American Physician*." In a public school of five hundred or more pupils it was found that the boys were very much inferior to the girls in every way. It was also discovered that a large majority of the boys were habitual smokers of cigarettes. An investigation was ordered to ascertain exactly how far the smoking was to blame for the boys' inefficiency and low moral condition. Twenty boys who were known not to use tobacco in any form were drawn by lot, and twenty boys known

to be "cigarette fiends" were closely observed for several months by ten teachers. The ages of the boys were from ten to seventeen. Of the twenty smokers, twelve had smoked more than a year and some several years. All used cigarettes, while some used pipes and cigarettes occasionally. The following particulars were noticed in the smokers: Twelve of them had poor memories, and ten of the twelve very poor; only four had fair memories and not one of the twenty had a good memory. Twelve were in poor physical condition. Six were subject to "sick spells," and were practically already physical wrecks; eight were reported as being in fair condition, but none were excellent.—*Union Worker*.

WHY DOORS ARE CLOSED TO THE CIGARETTE USER

THE *Sunday School Times* gives a long list of prominent business houses which have closed their doors against cigarette-users. Why? Because they can not be depended upon. Since this perilous habit is increasing and when it comes, it comes to stay, we want you grammar-school boys to think well before you take your first cigarette. Although manhood seems only a little way off, the body-building is not yet complete and you are the great Architect's assistants to bring it to perfection.

You have learned about the millions of cells that make up your body—"little workers" on duty, each faithful in its place—but in order to do this they must be properly nourished. Now what happens when the deadly poison of nicotine which is found in every cigarette comes in contact with the brain cells? Just this! It steals among them and poisons them to death—attacks the motor nerves, makes them stagger, and then your hand fails to make the straight line you were trying for. The "stream of life" which is being pumped by that marvellous engine, your heart, gets clogged, your lungs are weakened, your muscles flabby,—worse than that, your will-power fails in its purpose to keep you from doing wrong. Often the irritation in the throat leads to a thirst for strong drink, and the life is ruined.

Even the old smoker will warn you to keep from this habit while you are young. And surely you do not want to be satisfied to be unclean in your habits, dull at school, stunted in your growth, satisfied to let your pennies and dimes go up in smoke rather than earn others to help build the home some day. The power of choice—Yes! or No!—God has given you. In everything will you not build for a noble, worthy manhood?—S. E. GEDDES, Orange, N. J.

PENNSYLVANIA PHYSICIANS BELIEVE IN TEMPERANCE PHYSIOLOGY

THOSE who have followed the progress of Scientific Temperance in the different states doubtless know that five physicians of Pennsylvania, known as the Lautenbach Committee, published last year in the *Pennsylvania Medical Journal* a series of criticisms on the indorsed school physiologies, which were fully answered several months ago. At the recent annual meeting of the Pennsylvania Medical Society, Dr. Lautenbach's committee presented a report repeating their unfounded criticisms of the books, condemning the methods of the Woman's Christian Temperance Union, and recommending that a committee be appointed to consider the advisability of state supervision of the school text-books in physiology and hygiene.

The following letter from Dr. Kane, to the *Public Ledger* shows the kind of reception which this report met with at the hands of the Convention. Dr. Kane is an admirable spokesman for the large majority of Pennsylvania physicians who believe in helping forward the temperance teaching in the schools.



"Every night and morning Jane and Vida go for milk, and bring home a great, foaming pailful."

KANE SUMMIT HOSPITAL,
KANE, PA. Sept. 29, 1903.

Editor Public Ledger:

In your issue of the 23d is quoted the adverse report of the Lautenbach Committee on revision of school text-books, it appearing as though this had been approved and indorsed by the State Medical Association. This was not the case. In fact, the report was almost unanimously (thirty-five against five) laid upon the table, with strong expressions of disapproval and with censure for the offensive language with which the valued labor of the Woman's Christian Temperance Union and other temperance workers was therein characterized. So strong was the resentment of the society that the chairman of the committee did not even receive the customary vote of thanks. As a member of the Executive Council who took an active part in the debate which followed the reading of the report, and as one of those physicians who have been much interested in retaining in our public schools these excellent temperance physiologies, I therefore feel it incumbent upon me respectfully to correct the error which this partial statement of the facts above referred to would induce.

These indorsed physiology text-books teach our grow-

ing children in simple language, clear and easy of comprehension, the detrimental action of alcohol and other narcotics upon the human system; the danger of acquiring the drink habit, and the results of intemperance both morally and physically. They demonstrate practically the futility of expecting students to attain high proficiency in their classes or perfection in physical development if they indulge in alcoholic liquors and tobacco. The chapters devoted to hygiene are admirably worded and would serve as valuable guides to adults as well as children. All the adverse criticisms on the endorsed text-books made by Dr. Lautenbach were well answered several months ago by the text-book committee of the Advisory Board of the Department of Scientific Temperance Instruction in the Woman's Christian Temperance Union, a Board comprising some of the ablest scientists and philanthropists among the medical profession and clergy.

The true state of the case in regard to the matter of temperance teaching in the public schools is this: that these school physiologies have been admirably written, well liked by teachers, and have done good work for our

children. As is the case, however, when a good work proves productive of success, antagonism arose. An effort was made to work up an adverse sentiment within the medical profession, a committee was somehow appointed purporting to have been elected by the State Medical Society to do what was termed revising our school text-books. I believe they hoped to present their report and get us physicians to sanction it; but they reckoned without their host and lamentably failed. For, of late years, the medical profession has made rapid strides toward the solution of the liquor problem, and realizes today that the best cure for that curse of drunken-

ness which threatens to wreck American manhood is through prophylactic treatment; the instillation of temperance principles and a horror of drunkenness in the growing minds of the children of our land.

(Signed) EVAN O'NEILL KANE, M. D.

The oldest life insurance policy-holder in the world, Mr. Charles H. Booth of Englewood, N. J., has just celebrated his one hundredth birthday. His is a remarkable instance of well preserved and authentic extreme old age. Perhaps no more forcible argument in favor of total abstinence can be found than this aged yet still active gentleman who has never tasted tobacco or liquor. In connection with the celebration of his recent birthday, the Mutual Life Insurance Company presented him with a handsome testimonial, hand-engraved upon parchment, a valuable souvenir of a great occasion.

SCIENTIFIC TEMPERANCE INDORSED BY GOOD TEMPLARS

The series of brilliant receptions arranged for Mrs. Mary H. Hunt since her homecoming completely refutes the old adage "A prophet is not without honor save in his own country." The Woman's Auxiliary of the Good Templars of Boson and vicinity were first in the field to thus welcome Mrs. Hunt, under the leadership of Mrs. L. M. Robinson, the President, of Cambridge, and Miss Jessie Forsyth, of Boston, the Chairman of the committee in charge of the program. Nearly all the Boston Lodges were well represented at this reception, held September 28, in Parker Memorial Hall, Boston. Delegates were also present from Worcester, Marlboro, five district Lodges, and the two Grand Lodges of the state, the English-speaking and the Scandinavian.

This very representative gathering of the Order throughout the state made significant their enthusiastic indorsement of Mrs. Hunt's views regarding the necessity of every child in the public schools, from the lowest primary through the first year of the high school, getting each year regular, definite instruction in temperance physiology. The Good Templars of Massachusetts take no uncertain stand as to the necessity for thorough enforcement of the temperance education law.

A delightful program of welcome with abundant music had been prepared and was well carried out. Letters of regret at being unable to be present, and of appreciation of Mrs. Hunt's great work, were read from Mrs. Livermore, Mr. E. H. Haskell, Rev. E. O. Taylor, D. D., Rev. Alfred Noon and others.

Addresses of congratulation were made by representatives of local, district, state, and international orders, while the Juvenile Good Templars, represented by Miss Ruby Morrison, presented Mrs. Hunt with a bouquet of two hundred red, white and blue flowers, the colors of the order, symbolizing faith, hope, and charity, and tied with a broad band of white ribbon in token of Mrs. Hunt's official relation to the Woman's Christian Temperance Union.

Mrs. Hunt spoke delightfully of the rapid progress now being made by Scientific Temperance in Germany and England, and of the keen economic interest of those countries in the temperance education movement which has made the American workman the soberest and best in the world.

Be sure to read the article on commercial supremacy on page 17. It shows what the teachers of this country are doing.

CHILD TRAINING

In an article in *The Delineator* for October, 1903, on the "Education of Girls as future Wives and Mothers," Mrs. Theodore W. Birney describes a practical and very suggestive plan which was adopted by one mother in the instruction of her own children and some little friends of theirs. She has organized a club to which she will give a portion of every Saturday, for the instruction of the youthful members in cookery and other housewifely duties. To lay the foundation for a thorough training in matters that pertain to wifehood and motherhood, each little girl will be given a doll, presumably a few days old, which she will be taught to bathe and dress and to do the one hundred and one other little things necessary in the care of infants. The members of the club will follow the babies through the various sicknesses to which young children sometimes succumb, and as the imaginary baby grows older, an interesting feature will be the introduction of questions of obedience and punishment, etc. This training will doubtless prove of inestimable benefit to the children, stimulating an interest in home matters and giving them an understanding of things which every woman should possess. More clubs of this kind should be organized.

Have you adopted a Course of Study in physiology and hygiene for this year? If not, it is the next thing to do. Do not make the mistake of spinning the work out through the year with one lesson a week, which your pupils will forget before it is time for the next. Three or four lessons a week for ten weeks of each year is the ideal plan. The course of study should show the teacher in each grade just the topics she should teach this year without trespassing upon the advanced matter adapted to her pupils next year.

Have you provided the Oral Lesson Book for all primary teachers, showing just what to teach in each primary grade and how to teach it?

Are you wondering how you can prevent the boys in your schoolroom from forming the cigarette habit?

We have yet to hear of a cigarette fiend among boys who have had such oral work in temperance physiology as above outlined in each of the three primary years and definite, systematic instruction with the aid of text-books through the grammar course and the first year of the high school. Why not try this plan with your pupils?

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PHYSIOLOGY TOPICS FOR OCTOBER

PRIMARY—Position. Playing. Working.
How the Body is held in place and supported.
How the Body is Nourished. Unwholesome
Food and Drink.

INTERMEDIATE—Lungs and Breathing.
Growth; Aids and Hindrances.

ADVANCED—Body Training. Cells.

PHYSIOLOGY TOPICS FOR NOVEMBER

PRIMARY—Growth. Rest. Sleep. Behavior
at Table, at Home, on the Street, in School.
How the Body can move.

INTERMEDIATE—Heart and Blood. Food.
Alcoholic Drinks.

ADVANCED—Body Cleanliness. Respiration.
Organs of the Body.

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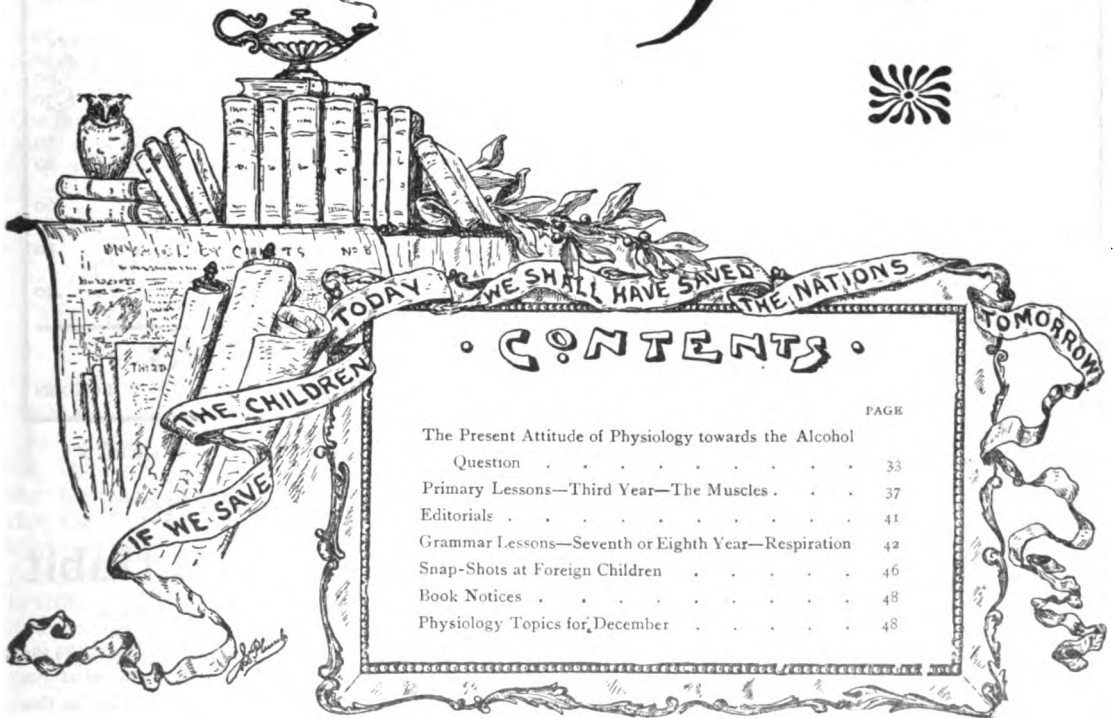
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THE SCHOOL PHYSIOLOGY JOURNAL



• CONTENTS •

	PAGE
The Present Attitude of Physiology towards the Alcohol Question	33
Primary Lessons—Third Year—The Muscles	37
Editorials	41
Grammar Lessons—Seventh or Eighth Year—Respiration	42
Snap-Shots at Foreign Children	46
Book Notices	48
Physiology Topics for December	48

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No. 3

INDIAN SUMMER

BY TERTIUS AND HENRY VAN DYKE

A SOFT veil dims the turquoise skies,
And half-conceals from pensive eyes
The bronzing tokens of the Fall;
A calmness broods upon the hills,
And Summer's parting dream distils
A charm of silence over all.

The stacks of corn, in brown array,
Stand waiting through the placid day,
Like tattered wigwams on the plain;
The tribes that find a shelter there
Are phantom peoples, forms of air,
And ghosts of vanished joy and pain.

At evening, when the blood-red crest
Of sunset passes through the West,
I hear the whispering host returning:
On far-off fields, by elm and oak,
I see the light, I smell the smoke,—
The camp-fires of the Past are burning.

—In August *Harper's Magazine*.

THE ALCOHOL QUESTION

THE PRESENT ATTITUDE OF PHYSIOLOGY IN
REGARD TO IT

BY MATTI HELENIUS

IN the present attitude of science no distinction is made between alcohol in distilled and in fermented liquors. As late as 1861, the German Professor Kranichfeld regretted that the English and American experimenters confused the alcohol in whisky which is a "true poison" with what he called "the nourishing healthy spirits of wine." . . . But science has now overthrown this hypothesis.

"First," says Gaule, "science has well established that the source of alcohol has little to do with its effect. It is all one whether alcohol is obtained from the poetic grape or the prosaic potato, whether it is praised by the poets as nectar of the gods or as common whisky, in all intoxicating drinks the common fundamental principle is a material of well defined chemical quality and well defined physiological action,—alcohol."

Most important is the question whether the ordinary alcohol or spirits, the ethyl-alcohol, may be considered as harmless in comparison to the other, higher alcohols, by-products of fermentation and the distillation of spirits grouped by Hjelt and Aschan under the name of fusel oil.

The French experimenters, Dujardin-Beaumont and Audigé, came in their experiments, the results of which were published in 1879, to the conclusion that ethyl-alcohol is less poisonous than the higher alcohols and that the harmful effects of alcoholic drinks depend upon the degree of their purity. Upon the authority of these experimenters a theory was advanced that has grown with time and has had great consequences. This was, namely, that if, by applying suitable processes, the impurities, the fusel oil, were expelled from whisky, it would be comparatively harmless. Traces of this view are seen in the laws of the northern countries; and the theory has had great practical results elsewhere. It forms, indeed, the sanitary motive for the introduction of the alcohol monopoly in Switzerland; by this the alcohol monopoly in Russia is defended as legitimate; and, recently, we have the design of an alcohol monopoly in France which rests upon this basis.

But can such a conclusion be drawn from the experiments of Dujardin-Beaumont and Audigé? . . . In the same published report Dujardin-Beaumont says: "It is self-evident, and I lay much emphasis upon it, that ethyl-alcohol, even chemically pure, is a poison, and that a person can be poisoned as easily by wine-alcohol as by the poor and impure alcohol made from grain. All depends upon the amount." Magnan says: "Yet it must be stated, that rectified alcohol, ethyl alcohol itself, taken in sufficient quantities produces all the symptom of alcoholism."

Besides these, other experimenters in their research work have come to the conclusion that the higher alcohols play only a secondary part, that the fusel oil may somewhat strengthen the whisky, but that the ethyl alcohol, on account of its much greater amount, comparatively speaking, is the chief poison in alcoholic drinks. Recently in Germany George Baer, in his experiments, carried on under the supervision of Professor Munk, in regard to the poisonous action of alcohol, came to this conclusion. Before him Strassmann and still earlier Stenberg, Hamberg and others obtained the same results.

At the 26th Congress of the South-German Society of Psychiatry in Karlsruhe, Sommer said that "there is no essential difference between the pathologic effect upon the nerves of pure ethyl alcohol and alcohol containing fusel oil." In his most recent text-book upon toxicology Jaksch says, "It must be remembered that pure ethyl alcohol also acts as a poison, even in smaller

amounts than in the mixed alcohols here named."

In Belgium the question has been widely investigated on both sides. In a royal commission appointed, in 1895, to inquire into all sides of the alcohol question, Bruylants, a member of the Royal Medical Academy, reported valuable analyses of his work done in connection with the Professor of Chemistry in the University of Brussels, Depaire, and Peterman. On the basis of these it is established that, even if the fusel oil were five times as poisonous as pure ethyl alcohol—which would be a high estimate—still at the highest, only 1—1.2 per cent of the destruction done by alcoholism could be ascribed to the fusel oil. They made, moreover, certain observations that other investigators have already proved true, namely, that cognac is more impure than whisky made from grain. Cognac of the best quality contains from 2 to 2.2 per cent fusel oil.

Ethyl alcohol, therefore, is responsible for alcoholism.

The French have now admitted this themselves. The well-known investigator, Legrain, holds the hypothesis to be a great error, that the danger of alcoholism can be met by rectification of the state monopoly. Verhæghe gave the question very lengthy and careful consideration and decided that it is not enough to improve the whisky, but that the thing to do now is to fight the constantly growing consumption of alcohol. In England the question has been brought up in two Parliament commissions, but there also the "fusel oil question" was assigned no practical value compared with the alcohol question. With a view to the northern countries, Pippingsköld wrote in 1890:

"Our other physicians of Finland, and in my opinion, practically all physicians of the north think that alcoholism and other dangers arising from the misuse of alcohol are due far more to the high percentage of ethyl alcohol in our unrectified spiritous liquors than to the small traces of amylic alcohol they contain."

Also in Russia, it seems, people are awake. In a Petersburg commission, which studied the alcohol problem for a considerable space of time, Borodine and Lozinsky reported a sharp attack upon the old theory that properly rectified whisky could be called a hygienic drink, and the commission found expression in Koppe's words:

"The whole world maintains that pure ethyl alcohol is of a nature to produce alcoholism, and that a mixture of carefully purified alcohol by no means deserves the name of a promoter of health." Gradually this truth has been accept-

ed. As Professor Forel at the Eighth International Congress of Hygiene and Dermography stated in such a forceful way:

"The toxic agent, the murderer of soul and body is and remains the ethyl alcohol itself, pure and unadulterated, fine or coarse, concentrated as in distilled liquors, or relatively diluted as in wine, beer and cider."

The future will show whether the legislators will pass as stringent measures against spiritous drinks containing ethyl alcohol as formerly against fusel oil. . . . In Finland the law in regard to the trade in spirits states that they must contain at least 35 per cent alcohol and be free from injurious by-products.

Although the ethyl alcohol in spiritous drinks is sufficient, in and of itself to cause injury, yet the addition of certain essences concentrates the poisonous character of certain alcoholic drinks. It is generally known what double danger exists in France from the constantly growing consumption of the so-called "aperitifs," of which absinthe is the best known. All investigators condemn decisively these drinks as most dangerous, not only for the individual but for the whole nation. When it comes to investigating the standpoint of medical science in the main points of the alcohol question, the investigator suddenly finds himself in an extremely difficult position for, on the one hand, there is no modern work on toxicology in which alcohol is not grouped with other poisons, and on the other, he finds a widespread daily use of it by healthy persons under the pretext that alcoholic drinks belong to the foods. Which of these two is true? Does alcohol belong with other poisons or should it be counted with foods?

We will confine ourselves first to the purely physiological side of the question. . . . Anstie, and after him Schulinus, Dupré and others came to the conclusion that alcohol for the greater part is oxidized in the body.

From this fact it is concluded that alcohol acts as a food in being oxidized and lessens the wearing away of body material. The supporters of this theory, of whom Binz is the most famous, emphasized the albumin-sparing properties of alcohol, and upon this was founded the supposed dietetic value of alcohol, chiefly for weak and poorly nourished persons. Attempts were then made to prove this theory by experiment.

First, we will assume that the theory is sound and we will quote from Holsti. "If, however," he says, "the consumption of albuminous matter were lessened, it is by no means thus proved that this would be of advantage to the body. If the alcohol, which has a great affinity for oxygen, deprives the cells of the body of the oxygen which these need for their normal preservation and for the fulfilling of their work, then

to be sure there is a smaller consumption of albumin, but this is an injury to the body, not a help. The fatty degeneration, which is found in different parts of the body from continuous use of alcohol, depends upon the fact that the alcohol deprives the cells of the oxygen which they need for their normal life. Fatty degeneration is an expression of imperfect oxidation. The action of alcohol as a protective agent is therefore not unqualifiedly beneficial, and it is not improbable that the total action of alcohol on metabolism is on the whole unfavorable." At the Congress of the medical society of Finland, in 1897, there was not a single dissenting voice from this view.

Again, the latest investigations have proved that it can not be unqualifiedly asserted that alcohol has always an albumin-sparing action. Of all the many older experiments, those of Miura and in part the experiments of Stammreich, carried on under the supervision of von Noorden will stand inspection best as to methods and exactness of execution, etc. These experimenters came to the conclusion that alcohol does not protect albumin. After a critical examination of all former literature, Rosemann, through his pupil Schmidt, carried out a series of experiments that must be regarded as standards. These agree with Miura in believing that alcohol has no protective value. Offer attempted to contradict this, but Rosemann shows that the methods of the former were faulty and that the results of Offer's experiments contradict his conclusions.

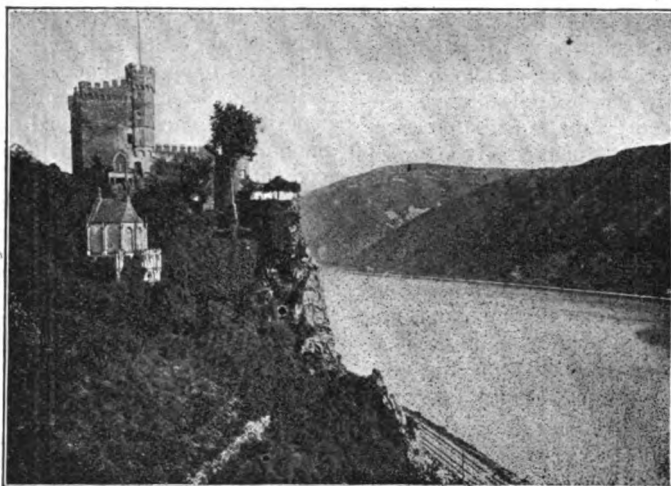
On the ground of similar experiments, many eminent investigators, some time ago, thought that alcohol must be denied all albumin protecting action, as Bunge says in his well known manual on physiological chemistry, and that alcohol, consequently, can not be regarded as of dietetic value.

Later experiments of Rosemann are in harmony with those of other investigators showing that alcohol in the first days of the experiments exercises a nitrogen-injuring action

on the cells of the body, but that the harmful effect in this respect decreases and finally wholly ceases, so that the nitrogen-sparing quality of the alcohol oxidized in the body is able to manifest itself. The body cells obviously in the course of several days become accustomed to the injurious influence of alcohol, and then this acts like the carbohydrates and fats, namely, as a fat and nitrogen protector.

What practical conclusions can we draw from this? "That alcohol can play no role in the nourishment of healthy persons is practically universally conceded to be true," says Rosemann, by which he reminds us that alcohol in time injures all parts of the organism. Hence the answer which the latest experiments have given to this question has only a theoretical significance; in practical life probably no one

would agree to calling that substance a food which manifestly acts as a poison, causing general ill health and other symptoms of poisoning. This is perhaps the place to recall the above mentioned passage from Professor Holsti. If we were to put off fighting against moderate drinking until physiologists were united on all



"The air grows cool and darkens, the Rhine flows calmly on; The mountain summit sparkles, in the light of the setting sun."

points, meanwhile mankind would long since have drunk itself to death. It is enough to explain that alcohol in no respect has an advantage over the carbohydrates; on the other hand, are all the well known consequences and dangers of its use.

In the fat-protecting action of alcohol, many scientists see only an evidence of degeneration.

I will now give some consideration to certain points of view that are potent in considering the food value of alcohol. Tigerstedt comes to the following result:

"There is therefore, no good ground, from the standpoint of food value, for declaring spirits useful for a healthy body. Hoffman says,

"A food material must be of such a nature that it can be taken in not too small amounts, under ordinary circumstances, without causing injury, and all medical experience shows that this is not the case with alcohol."

According to O'Gorman, Lauder Brunton declared that if alcohol is a fuel, it can only be compared to sulphur, which burns if we wish it to, but also invariably destroys.

Continually, lately, the objection has been raised that the oxidizability of alcohol alone is not enough to justify its being considered as a food. Schaefer, whose opinion Woodhead seems to value very much, says in his last manual of physiology :

"There can be no doubt that the little production of power which alcohol causes by its oxidation is not only balanced but outweighed by the destructive influence it has upon the tissue elements of the body, and especially on the elements of the nervous system."

In England, on account of the high authority of the scientist, the experiments of Richardson had great significance. In his "*Cantor Lectures*" he reports his extensive and long continued experiments, from which he concluded that alcohol raises slightly the temperature of the surface for a very short time, since the warm blood from the inner parts of the body is forced out to the skin, but that this lowers the temperature under normal conditions. At the same time, the amount of carbonic acid in the expired air is lessened, a phenomenon which Edward Smith thought he established. These disturbances, he thinks, arise from the fact that alcohol is not oxidized like food, but through oxidation it is broken up into secondary products at the cost of the oxygen which should be used for the natural warming of the body.

Even if there is not entire unanimity in regard to the out-put of carbonic acid, still the experimental researches made thus far demonstrate as a rule that alcohol exerts a disturbing influence upon metabolism, and when an investigator thinks he has discovered a slight increase in the exhalation of carbonic acid, still the most important fact is that alcohol, by using up oxygen, disturbs the equilibrium.

Woodhead speaks of experiments by Aitken and Harley, which show that alcohol has an especial affinity for the coloring matter in the red corpuscles, and when it has united with them the red blood corpuscles seem not only to absorb less oxygen, but they shrink away from the oxygen which they have already taken up. Woodhead himself establishes the two-fold disorder which alcohol causes in the functioning of the red corpuscles.

English and American scientists assert that alcohol changes the form of the red blood corpuscles, and that these are thus rendered less inclined to take up the carbonic acid and carry it off. After Davis, Berkley and Friedenwald, who experimented with circulating blood, came

to the same conclusion, namely, that alcohol causes a shrinking and irregularity in the red blood corpuscles and lessens the haemoglobin content. German scientists seem however to have no knowledge of this. Mayer could find no affect from small doses of alcohol either upon the red blood corpuscles or upon the haemoglobin. Laitinen also marked in his experiments with animals no action of alcohol upon the number of red corpuscles and the haemoglobin. Further investigation upon this point is, therefore to be desired. It is reasonable to suppose that such changes in the blood corpuscles occur only after unusually large doses or in certain alcoholic diseases. However that is, alcohol has such an affect on the blood that the organism soon feels a lack of oxygen; this may simply result from the fact that alcohol uses the oxygen (Holsti, Smith) necessary for the normal life of the body cells, or from the fact that alcohol makes the red corpuscles less able to unite with oxygen (Woodhead, Ridge).

It seems to me that the findings of all these experiments can be grouped quite simply thus: alcohol consumes in its oxidation the available oxygen and in so doing robs the cells of it; since, at the same time, it injures the red blood corpuscles by throwing obstacles in the way of their taking up oxygen, an oxygen-hunger arises, shown in the efforts of man to draw in more air, and so the increase in the depth of respiration is explained. It is likely that a possible decrease in the exhalation of carbonic acid could be traced back to the diminished change of matter caused by alcohol, as well as, perhaps, to the diminished ability of the red blood corpuscles to remove carbonic acid. This disturbing interference of alcohol in the natural change of matter can not be otherwise than harmful.

Hueppe says in his latest work on hygiene :

"Even in small doses which the body can dispose of, alcohol retards the change of matter and hinders the normal development of kinetic energy derived from real food substances."

Some years ago Kassowitz, talking before the Physiological Union in Vienna, closed with these words :

"And if I had contributed in bringing about the overthrow of the dogma of the nourishing and strengthening qualities of alcohol, which I must regard as one of the momentous mistakes of science, then I would in that alone feel sufficiently repaid for my efforts."

Since then, in several writings, he has fought the view that alcohol is a fuel or food.

Through this action of alcohol its pretended beneficial qualities are explained.—*Translated for the JOURNAL.*



Primary Lessons

THIRD YEAR

THE MUSCLES

A PRINCE of the royal house of Japan is working in jumper and overalls as a day laborer in the Pennsylvania railroad shops. He does not need the dollar a day which such work commands, but he does need the manual training it involves in order to fit him to carry out his plan of entering the imperial railway service of his own country.

This illustrates one of the most hopeful phases of the new education,—the tendency to correlate ideas and actions, to make the child a doer, an originator as well as a thinker.

Arithmetic, on this plan, is now studied in the concrete. The child knows that two pints make a quart because he has used one of these measures to fill the other. He learns geography to day from the outdoor world no less than from the text-book. In all his studies he is being taught to make real use of what he knows, and the result is an able body as well as an able mind.

Physiology combined with physical training offers the best possible opportunity to develop the child's bodily movements while increasing his mental power. By it he is taught to use his body intelligently at the same time that he is learning how it is made and the kind of care that it needs.

The present lesson pre-supposes that pupils in this grade have already been given a general survey of the parts of the body, finding how it is made up, how supported and held in place, together with suitable physical exercises. The next subject for class work will naturally be that now chosen for development,—How the body can move, or its need of a muscular system.

(1)

HOW THE BODY CAN MOVE

In taking up this topic we are dealing with a part of the body which is beneath the skin, and thus out of sight. At the outset, therefore, it

must be made clear to the mind of the child just what is meant by muscle. This can best be done by showing what the muscles do.

Call attention to the nearest tree, if one is in sight from the schoolroom. If not, show a picture of a tree.

Ask how a tree is like a person, bringing out these points of similarity:

A tree is alive.

It grows.

It has a head or crown, a trunk, and limbs.

How is a tree unlike a person?

From the different answers to this question, select that which tells that a tree can not move about as a person can. It must always stay in the same place.

What is it that makes the body able to move?

Have the children roll back their sleeves and move the right arm back and forth at the elbow. What are the fleshy parts of the arm doing as you move it?

Put your hand on these parts. What do you feel?

If we look at our arms, we see only the skin. The parts that we feel move are under the skin where we can not see them. Sometimes they are called the flesh, but there is another name for them. What is it?

If no one can give the word, muscles, write it on the board.

Take hold of your leg just below the knee and try to walk. Where are the muscles that move the leg?

Put your hands on your sides and draw a long breath. What part of the body moves? What do these chest muscles do?

Point to the muscles that move when you whistle; when you laugh; when you shut your eyes.

Turn your heads to the right. Where are the muscles that help you to do this? Turn to the left. Find the muscles that you use in doing so.

Who can find other muscles of the body? Where are they? What parts of the body do they move?

Name another way in which a person would be like a tree if he had no muscles.

POINTS TO REMEMBER

We are alive and can move about; a tree can not.

We can move because we have muscles.

A tree has no muscles.

Muscles move the different parts of the body. A great many muscles are needed to do this. The muscles are covered by skin to keep them from getting hurt.

Some of the muscles help us breathe.

Others help us eat.

The muscles of the eyelids shut our eyes when we are tired, and open them again when we are rested.

Every part of the body has its own muscles. If we had no muscles we could not run or play. We could not talk or laugh or sing. We could not move.

(2)

STRENGTHENING THE MUSCLES

Which do you think has more muscles, you or your father? Probably you will all say your father, but you are wrong. Even the smallest baby has just as many muscles as any grown person. The only difference is that a child's muscles are softer and weaker and smaller.

What can you do to help your muscles grow?

This is a good question for us to think about, and the first thing to remember is that whatever helps you grow will make your muscles grow too, because they are a part of you.

Sometimes when your coat or dress gets too small, your mother makes it larger by putting in more cloth. So we make our muscles larger, and other parts of our bodies as well, by putting new material into them.

This new material is not cloth. What is it? How do we give food to the muscles?

What do you suppose mamma would think if your dresses could grow larger of themselves, if she gave them cloth enough?

That is just what your muscles do. All we have to think about is giving them enough food to work with. They take it and make it over into new muscle, longer and larger than the old.

How often do the muscles need food?

Our clothes do not need mending every day, or even every week if we are careful of them. But our bodies need new material several times a day. How do we know when they need food?

Muscles need something besides food to make them grow strong. Let us think what it is. Why is it that big boys can play ball better than little ones? What can you do better than children who are smaller than you? This shows that exercise is another thing that makes strong muscle. Every time you throw a ball or use your arm in any way it helps to make your arm muscles strong. Tell some of the ways you have exercised these muscles since you got up this morning.

What have you done to exercise your leg muscles today? the muscles of your back? of your chest? the muscles of your hand? of your face? of your neck?

Suppose you were to use your right hand for everything, and do nothing with your left, which would grow faster and be stronger? Why do

we need to use all our muscles every day? What will happen to them if we do not give them enough exercise?

How do the muscles of your legs feel after you have been running or playing hard? What can you do to make them feel better?

Rest is thus another thing that the muscles need. They can not grow when they are very tired, any more than you can work or play when you are tired. They need ten or twelve hours of sleep every night, in order to rest them for the next day.

Perhaps you wonder how you can know that your muscles are really growing, when you never see them. Can you wear the same clothes you could last year? No; you need larger shoes and gloves and every other kind of clothes. This shows that your muscles are longer and larger, and so need more room.

Another thing that shows that muscles grow is that you can do things easier and quicker after you have done them a good many times. Name some of the things that you find it easier to do now than you did last year. What makes them easier now? This is one reason why we should begin to use our muscles in useful ways while we are children. It will make them skilful when we are grown.

In schools provided with a well equipped gymnasium and a special teacher, pupils stand a good chance of getting a certain amount of physical training. But when these advantages are lacking, the work may be neglected altogether unless the regular teacher strongly realizes the need and determines to meet it in the best way she can.

Such teachers have usually the advantage of comparatively small classes, and thus can give more individual help and oversight.

Find what muscles in each child are most undeveloped, and which, if any, are being overdeveloped. Observation will answer these questions in part. In addition, find what each child does regularly day after day, and which of his muscles are thereby most in use.

Then so plan the physical exercises for the school as to supplement the play and work outside. For instance, if the child has much walking to do, pay special attention in school to arm and hand training. If he breathes poorly and does not stand well, emphasize chest and back exercises.

Call the child's attention to well developed people, and arouse the desire to make every part of one's own body equally strong and healthy and beautiful.

Point out the opportunities for physical culture for which no other apparatus is needed than the child's own games and plays and daily tasks. A story will often do this effectively.

GYMNASTICS AT HOME

Dorothy lived in a beautiful city, with broad, shady streets and large playgrounds.

She went to school with other little girls, and had lessons and played games just as you do. Dorothy liked to go to school, but the part she liked best of all was the gymnastic exercises they had every day just before recess.

Dorothy's teacher was tall and graceful and very pretty. She believed in gymnastics, and explained each new movement very carefully.

"You must learn to use every part of the body," she told the children. "If you don't, you will grow one-sided."

So they had arm exercises and head movements and body drills without number, and a grand exhibition at the close of school with flags and wands.

Then came the long summer vacation when Dorothy always went to the country. She liked to be there with papa and mamma and all the rest, but she could not bear to miss the gymnastic class. She might forget all she knew, and not grow up straight and tall like her pretty teacher.

Mamma came to the rescue.

"We'll have gymnastic exercises at home," she said.

"Why, how can we?" asked Dorothy. "We haven't anything to work with."

"Oh, yes, we have; lots of things. What have you been doing since you got up this morning?"

"I ate my breakfast," said Dorothy, "and cleared away the dishes, and swept the piazza, and took the baby out in her carriage, and skipped rope with Gertrude, and watched the parade go by, and played soldier, and—that's all. Oh, no, I washed Miss Corn Crisp's clothes and hung them up to dry just the way Bridget does our washing."

"Let us see how many kinds of gymnastics all this play and work have been giving you," said mother.

"At breakfast you used your hands and arms to carry food to your mouth, and your throat to swallow it.

"When you carried away the dishes, and when you took baby out, your hands and arms got more exercise, and your legs too.

"Leaning out of the window to see the parade gave your head and neck exercise.

"Playing soldier was good drill in standing and marching.

"When you skipped rope and when you were doing your doll's washing, you exercised your whole body.

"In school, you seldom have more than one or two kinds of gymnastics a day, and this morning you have been exercising every part of your body without knowing it."

"So I have," said Dorothy, "and it's fun, too, but what shall I do tomorrow?"

"We'll find out when tomorrow comes," said mamma mysteriously. "The class in home gymnastics will meet as soon as you are up."



"I wash Miss Corn Crisp's clothes and hang them up to dry."

POINTS TO REMEMBER

Children have just as many muscles as grown up people, but they are small and weak.

One thing that makes the muscles grow is food.

To make good muscle one must eat good food.

To make strong muscle one must take plenty of exer-

cise every day.

Work and play outdoors are the best kinds of exercise for the muscles.

After muscles have been exercised they must have a chance to rest.

We must go to bed early when we are children if we want to grow fast.

(3)

WEAKENING THE MUSCLES

While we are taking so much pains to make good muscle by getting plenty of exercise and rest every day, and by eating the right kind of food, there is one more thing to remember. We must not do anything to upset our work and weaken the muscles we are trying to make strong.

What are some of the ways in which muscles

can be injured? One way is to give them too much work to do.

How could any one hurt the muscles of his arm in this way? of his legs? his back? his eyes?

How can we know when the muscles of any part of the body have had exercise enough for that time and need rest?

Another way in which children and young people can weaken their muscles is by using tobacco. Show how a boy with good strong muscles would walk across the room. How does the cigarette smoker usually walk?

What is the reason that he does not stand straight and tall? Why would he make a poor errand boy? Why do other boys dislike to have him on their side in any game?

Who knows something else that can weaken muscle? Any drink that has alcohol in it. What are some drinks, then, that we must not taste, even if they are offered to us?

Beer and other drinks that have alcohol in them sometimes make people fat, but they never make any one strong. A fat boy can not run so fast as a boy with less fat and more muscle.

Perhaps you think you would like a cup of coffee or tea these cold mornings. But I am sure you will change your mind when you find out that both these drinks hurt young muscle. They make it weak and shaky.

What shall we choose for our drinks, in order to have strong, steady muscles?

Water and milk are the best drinks, and a bowl of hot oatmeal and milk will warm you up cold mornings just as quickly as coffee would. It will do something else, too; it will strengthen muscle instead of weakening it.

POINTS TO REMEMBER

Too much work will weaken the muscles instead of strengthening them.

When the muscles of any part of the body feel tired it is time to rest them.

Tobacco weakens muscle.

It makes the boy who uses it idle and lazy.

Beer and other drinks with alcohol in them weaken muscle. Sometimes they change good muscle to fat.

Tea and coffee will not give a child strong muscles.

They may give him a shaky hand instead.

The best drinks are water and milk.

AUTHORITATIVE QUOTATIONS

ALCOHOL STRONG ONLY TO DESTROY

Never let this lesson be forgotten in thinking of strong drink: that the drink is strong only to destroy; that it never by any possibility adds strength to those who drink it.—THE LATE SIR BENJAMIN WARD RICHARDSON, M. D., LL. D., F.R.S.

TOBACCO HINDERS DEVELOPMENT

Judging from my own observations in thirty years of medical practice, I fully agree with the declarations of many of our learned scientists that very few, if any, who smoke tobacco in youth ever make vigorous men.—D. H. MANN, M. D.

The use of tobacco by children is very seriously bad, physically and mentally. The tendency is to prevent development of the muscles and bones and nerves.—S. H. JONES, Supt. of Instruction, Cleveland, O.

I have pleasure in placing on record my unqualified condemnation of the practice of cigarette smoking and of the use of tobacco in every form, amongst the young. Its effects, in retarding mental and physical growth, in lowering nervous vitality, and in blunting the moral faculties, are quite perceptible in cases which come under my observation from time to time.—B. N. WALES, M. D., Robinson Bury, Quebec.

A very small girl in a Harlem apartment was observed by a friend of the family eating a certain cereal preparation. She seemed to eat, as the English are said to take their pleasures, sadly.

"Don't you like that, my dear?" inquired the friend.

"Not partic'ly," replied the little maid.

"Why do you eat it, then?" persisted the inquirer.

The daughter of the house paused with spoon on edge of bowl.

"It's got to be eaten," she answered gravely. "The groceryman gives mamma a rag doll for every two packages she buys, and its got to be eaten every morning."

And she continued to eat cereal.—*Christian Endeavor World*.

WHEN GODFREY GROWS

I wonder when it is I grow!

It's in the night, I guess.

My clothes go on so very hard

Each morning when I dress.

Nurse says they're plenty big enough;

It's cause I am so slow.

But then she never stops to think

That children grow and grow.

I wonder when! I can't find out.

Why, I watch Tommy Pitt

In school for hours and I can't see

Him grow the smallest bit!

I guess that days we stay the same,

There's so much else to do

In school and play, so I must grow

At night, I think—don't you?

—LILLA THOMAS ELDER in *Youth's Companion*.

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ALCOHOL IN ITS RELATION TO THE BODY

"I AM a soul and I have a body," a wise man once said. For the growth and perfection of this body many kinds of activities are carried on within it. It is a busy workshop.

The bony system furnishes support to the body; the muscles enable it to move; the nervous system directs and controls movement; the organs of special sense furnish information; the digestive organs take in and prepare food which supplies energy; the respiratory system brings oxygen which, taken up by the blood, is driven by the heart and blood-vessels to all parts of the body. Waste is removed by the skin, kidneys, large intestine, and lungs.

All these organs in health work together for the good of the whole, while if one of them is injured the body suffers.

Such injury may be caused by various conditions, such as poor food, bad air, overwork, idleness, loss of sleep, lack of sunshine, the germs of disease, but a very common source of injury, which all may avoid, is a class of substances used from custom, in ignorance of their true nature. These are beer, wine, cider and other alcoholic drinks, tobacco and other narcotics, all of which have the power to create an almost irresistible craving for more.

Once people knew very little about these substances, and supposed them to be beneficial. Of late years many scientists have studied and experimented with them, and the following are some of the things they tell us about them and their relation to the body:

Dr. Howard S. Anders, Professor of Materia Medica, in the University of Pennsylvania, says:

"I hold that our modern knowledge of alcohol in the human body justifies the belief that in health it is never a food in any sense, be the quantity small or large, but always a poison, biologically or physiologically speaking."

Dr. Vacher, a British physician, says, concerning its effects on growth, that the result of strong drink in the living, growing system is to render growth less perfect, decay more rapid, life less vigorous, and death less remote.

Mr. Carnegie, the millionaire philanthropist, added ten per cent to the wages of his abstaining workmen. He made this statement in regard to the matter:

"The men are not required to be total abstainers, but all who are can obtain from me a gift equal to ten per cent. of their wages, with my best wishes, upon stating that they have abstained for the year. I consider total abstainers worth ten per cent more than others, especially if coachmen, yachtsmen, or men in charge of machinery. Indeed, I prefer them for all situations."

Dr. August Forel, who was for many years professor in the University of Zurich, says of the effects of alcohol on the brain:

"Destruction of the mind is much worse than impairment of the organs of the body. Alcohol affects the brain more than any other organ. All alcoholic beverages cause more or less disturbance of the brain and of the nervous system."

George W. Webster, Professor in Northwestern University Medical School, says:

"The rapidity of thought, the clearness of memory, the capacity to reason, the power to control, the will, are all measurable by instruments, and all are lowered by alcohol."

Professor W. H. Welch, of Johns Hopkins University, says:

"In one way or another most of the organs and tissues of the body may become the seat of morbid changes attributable to the poisonous action of alcohol."

These are some of the effects of alcohol upon the individual, but "no man liveth to himself alone." Individuals make society, and on society individual effects many times multiplied produce results which are thus described by Hon. Carroll D. Wright, Ex-Commissioner of United States Department of Labor:

"I have looked into a thousand homes of the working people of Europe; I do not know how many in this country. I have tried to find the best and the worst. And while, as I say, I am aware that the worst exists, and as bad as under any system or as bad as in any age, I have never had to look beyond the inmates to find the cause; and in every case, as far as my own observation goes, drunkenness was at the bottom of the misery, and not the industrial system or the industrial conditions surrounding the men and their families."



Grammar Lessons

SEVENTH OR
EIGHTH YEAR

RESPIRATION

PUPILS can measure up to the high educational standard of to-day, only as they are physically at their best. Thus teachers alone, unlike any other class of workmen, must provide their own material in the shape of conditions favorable to mental growth, before they can turn out the finished product, cultured men and women.

Brain power is more dependent upon oxygen than upon food. Hence the first essential to successful school work is a constant supply of pure air sufficient for each pupil. Fortunately, nearly all new school buildings are being planned to meet this need. But even in such hygienic surroundings it is easy to find flat-chested, anaemic children who are physically unequal to the mental work required of them.

What is the explanation? Watch closely, and it will be seen that they do not know how to breathe. Every tissue of their bodies is literally starving for the oxygen that is all about them but which they are unable to use.

Better development of the breathing organs in school children is thus an urgent need under the most favorable circumstances, while it is indispensable in the great majority of schools where such conditions do not yet obtain.

THE BODY'S NEED OF OXYGEN

The teacher will find it vastly easier working with the current of the child's interest than against it. Hence, at the outset, she should secure the co-operation of her pupils by arousing in them such a passion for pure air as will impel them to get it for themselves.

Let the first work on this topic be a series of exercises in deep breathing in the purest air you can find. Let it be outdoors if the weather permits; at least, in a clean, well ventilated room.

See that each pupil is suitably dressed, no bands about the waist or knees, but all garments suspended from the shoulders.

Take good position, chest raised and thrown forward, abdomen and hips drawn backward, weight on ball of foot, hands on sides, tips of fingers on waist line in front, thumbs back. Inhale slowly through the nose, and as long as possible. Exhale in the same way. Keep the mouth closed in all breathing exercises.

Repeat, with fingers and thumbs reversed.

What parts of the body do you feel move in each exercise?

What has been happening in the body while these breathing exercises are going on?

Give this second question to the class for study, asking them to find in the same connection

Where the air goes that is taken into the lungs.

What changes it makes in the body.

How air that is breathed into the lungs differs from that breathed out.

In studying the last question, the class will learn that there is more oxygen in inspired than in expired air. This shows that oxygen is the part of the air that the body needs.

What does oxygen do in the body? Explain this point by calling attention to what oxygen does in other instances with which the class are already familiar. For instance, ask what effect it has on a fire to open the drafts so that the oxygen of the air can get to the burning wood or coal. Tell the class that when we speak of anything as burning, we always mean that it is uniting with oxygen. Give the other name, oxidation, to this process.

When fuel is burned, or oxidized, in a stove, we notice a difference in the temperature of the room. What does this show one of the products of oxidation to be?

When fuel is burned, or oxidized, in an engine what do we get besides heat? Write on the board these two products of oxidation, heat and motion.

After taking long deep breaths of pure air, that is, air with plenty of oxygen in it, we too feel warmer and more full of energy. We want to use our muscles or brain. We want to do something. This shows that oxidation takes place in the body, as well as in the stove or engine, because we get the same results, heat and motion. In this case, it is the food we eat that is oxidized, instead of wood or coal.

What would happen if we gave the body plenty of food but no oxygen? If we gave it oxygen, but no food?

Name the kinds of work done by the different organs of the body which are directly dependent for their heat and power of motion on the oxygen we breathe.

Have the class find what is left behind when-

ever fuel is burned in a stove. Why must these ashes be frequently removed from the grate?

What is left behind when oxidation takes place in the body? What part of this waste is removed by the lungs?

When the class clearly understand the vital relation of oxygen to every act and process of the body, the next topic for study will naturally be the structure of the breathing organs, showing how they are fitted to do their twofold work, of carrying oxygen to every part of the body and of removing waste.

THE MECHANISM OF BREATHING

Ask the class to watch while you take a long breath. What parts of the body move? In what directions? What moves them? Have drawings made of all the organs of respiration, showing the relative position of each.

Bring into class a chicken's breathing organs, the windpipe and lungs. Find how they are connected, and the material of which each is made. Have the pupils feel the windpipe in their own throats. Why is it made of rings of cartilage? Why are these rings incomplete?

Trace the branchings of the windpipe to the lungs, using a chart or blackboard drawing for the purpose. How does the structure of the lungs differ from that of the windpipe? What is the reason for this difference?

The class have found that every part of the body needs oxygen. But the breathing organs which carry oxygen into the body end with the lungs. How then does oxygen get from the lungs to every other part of the body?

There is only one great moving organ which can carry it,—the blood. Call attention to the pink color of the lungs. What gives them this color? Show by diagram that all the blood in the body is continually moving towards the lungs to get rid of the waste it has picked up in the body and get a fresh supply of oxygen, then away from the lungs to carry this new supply of oxygen to every part of the body.

How does the oxygen get from the inside of the air cells of the lungs to the red corpuscles of the blood, which are the real oxygen-carriers?

It could not do so if it had to pass through any hard firm substance, like glass, for instance, but it does not. What kind of material does it pass through? Show a chicken's lungs again with this thought in mind, also an artery. The class will readily understand that oxygen can pass through such delicate tissue quite as easily as the odor of perfumery can pass through a bit of fine cloth held over the mouth of a bottle containing it. In the same way, particles of waste matter can pass from the blood-vessels into the lungs and so be thrown off into the air.

HELPS AND HINDRANCES TO BREATHING

Because life and health are so dependent upon oxygen, the important question for every one is how to make this supply as large as possible, and how to fit the body to take in more and more of it. We do not have to hunt for oxygen, nor pay great sums of money in order to get it. We have only to open our lungs wider and wider and take it in.



"Perhaps there lives some dreamy boy, untaught,
Who shall become a master of his art."

Take the present chest measurement of each pupil after inspiration and again after expiration. How can this lung capacity be increased? Remind the class that the lungs grow just as any other organ of the body grows, by use or exercise.

What games furnish good exercise for the lungs? In what other ways can the lungs be exercised? How should the clothing be worn to aid the development of the breathing organs? How is tight clothing a hindrance to proper breathing?

Our own breath has been called our worst enemy. The waste matter that it contains not only causes headache and weakness, but so lowers the vitality as to make one much more liable to take cold or contract disease.

How can we overcome this enemy? Only by breathing pure air at all times. Interest the class in everything pertaining to ventilation.

Explain how pure air is provided for the school-room. Then ask each one to find out and tell how the rooms in his own home are ventilated, especially the bedrooms.

Consumption is more common than any other disease. Teach the children that it can be prevented by strengthening the lungs so that they can throw off the germs which cause it. How is the smoker handicapped in developing or strengthening his lungs? the drinker? Why are people who have formed either of these habits less likely to recover than others if attacked by consumption?

Leave with the class the thought that while vigorous health is every one's right, it is also his duty to do his part towards securing it by developing all the organs of the body as fully as possible and by refraining from aught that can injure them.

AUTHORITATIVE QUOTATIONS

IMPORTANCE OF DEEP BREATHING

Call attention to the great importance of deep breathing, that is of inflating the lungs to their fullest capacity. Shallow breathing is the rule, deep breathing the exception, that is why consumption finds such a fertile field in a large proportion of people. In the majority of cases, consumption commences just below the clavicle (or collar bone), for here is the portion of the lungs that is least used in ordinary breathing. The individual with a pair of healthy lungs might inhale millions of tubercle bacilli daily with impunity. Like every other organ in the body, the lungs become vigorous with use, disuse means decay, therefore to develop the lungs they must be exercised by deep breathing. Even five minutes of lung exercise daily will work wonders.—

Omega.

AIRING OUR BEDROOMS

In winter, quite as much as in summer, the poisonous exhalations from the body during sleep should be got rid of, so that the air breathed at night will not become impure. Why is it that the tone of the system is generally lowered, and that many people think that they need a tonic or a "blood purifier" in the spring? Partly, no doubt, because the manner of living has not been in accordance with laws of health, and partly because the sleeping rooms have not been sufficiently aired.

In the first place, then, the bed should be opened, the blankets and sheets taken off, one by one, and well shaken, and arranged carefully in such a way that the air can blow upon them. Shake the pillows well and if possible leave them in a sunny, breezy spot; take off the blanket or quilt that covers the mattress. Lastly the mattress itself should be thrown up so that the air

can get around it. Then open the windows and let the out-door air sweep in and blow out all the accumulated impurities taken up by sheets and nightdress during the long hours of the night. This sort of ventilation is very effective, quickly removing foulness.—*Journal of Hygiene.*

A SUPERB BREATHING EXERCISE

The term dynamic breathing is used when the mind is concentrated on some image other than the muscles that are in action, as close attention to the latter soon paralyzes their motion. Fancy that you are breathing through the feet. You will draw a long, full breath with your attention at the feet, and a much freer and deeper breath can be taken than if the attention wandered or was held to the lungs. Then transfer your attention to the hands, then to the hands and feet together. Now think that you draw the air through your knees, then through the elbows, again through knees and elbows. Now fancy you draw the air through the hips, always with a deep, accordin-like stretch of the whole trunk, letting the air fill you as if you were a balloon. The shoulders should come next in thought. Again hips and shoulders are paired. Arriving at the trunk region, the abdominal and pelvic regions now center the thought. For a few seconds the diaphragm region receives the attention; to this is added the chest and head. Finally the body is regarded as a huge sponge soaking air in place of water.

The foregoing is not only a superb breathing exercise but it also harmonizes the nervous and blood systems. Concentrated attention to a given portion of the body, if the channel be unimpeded, will cause a flow of blood and nerve force to that portion.—GENEVIEVE STEBBINS in *Omega.*

CAUSES AND PREVENTION OF CATCHING COLD

Nothing conduces more towards strengthening the system and making it proof against colds, or breaking off the habit when once established than the daily bath, which is best taken on arising. The water should be cold, direct from the hydrant, and in winter the temperature of the room at least 60 degrees F. The sponge, shower or plunge, selected according to the constitution of the bather, should be accomplished within a minute.—FAYETTE V. EWING, M. D., in *Jour. Amer. Med. Assn.*

PREVENTION OF JUVENILE SMOKING

Some striking illustrations have been recently given by Mr. P. L. Lord of effects of cigarette smoking among school boys. In an American public school of about five hundred pupils it was found that the boys were very much inferior

to the girls in every way. It was also found that a large proportion of the boys were habitual smokers. An investigation was ordered to ascertain exactly how far the smoking was to blame for the boys' inefficiency, and low moral condition. For several months twenty boys who it was known did not use tobacco in any form drawn by lot, and twenty boys known to be "cigarette fiends" were closely observed by ten teachers. The ages of the boys were from ten to seventeen, the average age being a little over fourteen. Of the twenty smokers, twelve had smoked more than a year, and some several years. All twenty boys used cigarettes, while some also used pipes and cigars occasionally. The following peculiarities were noticed in the smokers: twelve of them had poor memories, and ten of the twelve were reported as very poor; only four had fair memories, and not one out of the twenty boys had a good memory. Twelve were in poor physical condition, six being subject to "sick spells" and were practically already physical wrecks. Eight were reported as being in a fair or good condition, but not one was excellent.

In Yale University comparisons were made for eight years between smokers and non-smokers. As compared with the smoker, the non-smoker gained 24 per cent. in weight, 37 per cent. in height, 42 per cent. in girth, and 8.36 cubic inches in lung expansion. In 33 of the states of the American Union attempts have been made by the legislatures to grapple with the evil. Enactments against juvenile smokers have also been made in Canada, Tasmania, Bermuda, and Prince Edward Isle. In Norway a similar measure was enacted not long ago. A bill is to be introduced into the British Parliament at the earliest possible date, under the auspices of the British Anti-Tobacco and Anti-Nicotine League, for the suppression of the use of tobacco by young persons under the age of sixteen.—*British Medical Journal*.

A HEAVY HANDICAP

The tobacco habit handicaps a boy in his physical development at the very start of life. . . . Of all forms of tobacco, cigarettes probably do the greatest amount of injury. A person who uses cigarettes is likely to inhale the smoke. This means breathing the smoke into the lungs, which is far more injurious than simply taking it into the mouth.—H. W. CONN, Ph. D. Professor of Biology in Wesleyan University.

POISONOUS ACTION OF ALCOHOL

In one way or another most of the organs and tissues of the body may become the seat of morbid changes attributable to the poisonous action of alcohol.—WM. H. WELCH, M. D., Professor of Pathology at Johns Hopkins University.

ALCOHOL PREDISPOSES TO TUBERCULOSIS



"Autumn, laughing, brown and gay,
Comes dancing down the woodland way."

The fact that alcohol predisposes to the contagion of tuberculosis has not been contested by any one. It has been pretended that rum, brandy, wine and beer are useful in the amelioration and cure of disease of the chest and tuberculosis.

Dr. Thiron, of the Facul-

ty of Medicine in Paris, considers that nearly all these cases simply and alcoholism to an already possessed disease, add thereby hasten a fatal termination.—A. FOREL, M. D., Zurich.

ALCOHOL A FACTOR IN CONSUMPTION

Modern science has now definitely ascertained that tuberculosis or consumption is due to the presence and ravages of a bacillus. . . . Any agent that checks tissue change, and the free distribution of oxygen in the body will favor the formation of a condition peculiarly susceptible to the growth and multiplication of the poisonous germs. Such an agent is alcohol, which has been shown by careful experiment and observation to be the main contributing factor of one-half our cases of consumption.—A. A. HILL, L. R. C. P., in a paper read at Stoke-on-Trent,

SNAP-SHOTS AT FOREIGN CHILDREN

SUNDAY morning in Rotterdam, and Easter Sunday at that! Hundreds of ships were lying peacefully at anchor at the mouth of the Rhine, and innumerable smaller craft on the canals were gaily decorated with flags representing almost every nation.

The housewives on the canal boats were doing their Sunday morning work; their heads neatly covered with the inevitable white cap, every now and then suddenly popping up on deck through the opening leading to the invisible quarters below, while the man of the house, or rather the man of the boat, puttered around his floating home, now tightening the chains which moored it fast for the day, now sweeping the deck, or readjusting his cargo of vegetables, garden plants or wood.

The canals in Rotterdam run through the city with streets and sidewalks on either side. No fence or wall incloses them, so it is not evident what prevents the children of the city from tumbling in. Perhaps the Dutch people have lived in a country of canals so long that the children instinctively have acquired the habit of keeping out of them, and so do not need to be taught the danger; or perhaps, like fishes, they instinctively know how to swim and so can save themselves from drowning if they do fall in. However, that may be, the canals are there and the children are there, and if there is any mixture of the two, it was not apparent.

The children were running and playing quietly on the sidewalks, flaxen-haired, and with rosy cheeks looking for all the world like highly polished Baldwin apples. It was in the middle of April and a wintry frost was still in the air, but the little girls ran about without hat or cloak, although their chubby arms were blue with cold in the short-sleeved dresses. The small boys in their knickerbockers were veritable miniature Rip Van Winkles.

Here and there a pair of wooden shoes was to be seen and heard as their small wearer clattered along upon the walks. More frequently seen were the white caps worn by maid and matron, sometimes made of coarse material, sometimes of fine lace, but always scrupulously fresh and dainty. These were often fastened on either side of the forehead by large headed pins or knobs of coiled gold wire, resplendent to look upon. The effect of the cap when worn by itself was quaint and pretty, but when it was topped off with a modern black bonnet, as was sometimes the case with the women, the result, to a foreigner's eyes, was comical enough.

Easter Monday showed us the country boys and girls in their holiday dress as they wended their way perhaps to church, perhaps to some

festivity. There were the wooden shoes as white and spotless as was possible on a spring day when every few minutes the earth was being turned into mud by a driving snow squall. There, too, were the inevitable white caps—no bonnets here—the straight, plain, black dresses of the girls relieved from somberness only by their white kerchiefs and aprons. The fields are untilled today because it is a holiday, but tomorrow and next week we shall see men and women, boys and girls, busily engaged in putting in the spring crops in the little plots of land which are divided off from one another by narrow ditches of water.

And, so watching them, we speed on into Germany.

American boys and girls would think it rather hard to be obliged to be in school at eight o'clock in the morning, when German schools begin. About a quarter before eight, one may see groups of little girls with their boxes and bags of books and lunch, gravely saluting one another as they meet, sometimes by a hand shake, sometimes by the *knix*, a courtesy, which every German girl learns to make so that she may know how to show due "honor to whom honor is due." The girls, as a rule, attend private schools, while their brothers trudge away to the public schools.

The boys, and sometimes the girls, carry their books and, for aught I know, their luncheons in a good-sized flat box which is usually held by straps just between their shoulders. Sometimes the box is covered with cloth, sometimes with a material having a stiff nap that must shed rain and snow beautifully, and so keep the books dry and clean. It is very convenient to have the books thus strapped up out of the way, as it leaves the boy two whole hands and arms free to do other things. He does not have to try to hold a lot of books under one arm while he is trying to get from his pockets one of the multitudinous treasures of which a boy's pockets are usually the storehouse, nor while he is trying to spin a top or shoot a marble or string a bow. Neither does he have to put the books down in a muddy place, nor stop to hunt for a clean one, nor run the risk of losing them altogether. Why should not American boys try this convenient box?

But there is one custom against which I feel very sure our American boys would rebel. How would George and John and Harry and all the rest of young America like to wear an apron or pinafore when at home? But these foreign boys do not seem to object, and you may see them of all ages under about twelve years, playing on the curbstones or in the door yards, their aprons gaily fluttering in the wind as the boys run about. The sense of wearing a pinafore ap-

parently does not prey upon their minds. Some of the little boys look very cunning in their wee blue or brown pinafores.

In Berlin and other German cities, the children revel in the public parks and squares. They play on the steps of the Parliament House which corresponds to our Capitol building in Washington. They swarm over the pedestals of the monuments. One boy is seen wearing that pre-occupied air that betokens a school composition as he wanders around the Bismarck monument evidently jotting down in his notebook some of the details of the monument for reference when he is ready to write. School boy troubles, in some respects, are the same the world over.

Entire families of children, babies and all, seem to be sent out with their lunch baskets to spend the whole or half day in the open air spaces of the parks and squares. They squirm under the stone basins where fountains sometimes play. They dance with glee by the great fountain in the park of Sanssouci Palace, or feed the stately but ever hungry swans in the moat.

They are merry little people, quickly responsive to a friendly word or smile. Under the colonnade around the National Gallery in Berlin, I met a wee two year old toddler. Not a word of German baby talk could I muster. He evidently could speak no German, much less English, but we needed no words to understand each other. I smiled at him and the responsive child face smiled back. Then, trying another experiment in international comity, I threw him a kiss. Quickly the little fingers demurely threw it back, the smile meanwhile broadening, and as I turned away waving him good-bye, the German baby hand waved babyhood's universal good-bye signal. Child hearts and child language are the same the world over.

CORA FRANCES STODDARD.

Grandma—"Bobby, what are you doing in the pantry?"

Bobby—"Oh, I'm just putting a few things away, gran'ma"—*Tit-Bits*.

A LITTLE GENTLEMAN

I know a well-bred little boy who never says "I can't";

He never says "Don't want to," or "You've got to," or "You shan't";

He never says "I'll tell mamma!" or calls his playmates "mean."

A lad more careful of his speech I'm sure was never seen!

He's never ungrammatical—he never mentions "ain't";

A single word of slang from him would make his mother faint!

And now I'll tell you why it is (lest this should seem absurd):

He's now exactly six months old, and can not speak a word!

—*St. Nicholas*.



"Wearing a pinafore apparently, does not prey upon their minds."

The School Board of London is trying to educate the people in hygiene. It has decided to open twenty experimental classes, and if these succeed more will be organized. Already eighty head teachers have applied to have these classes started in their evening schools, but at present only twenty will be opened. The best lecturers have been selected for the classes. Different classes of schools in various districts will be opened, some among the very poor, others in better-to-do working class neighborhoods. Each lecture

is to be made as practical and as elementary as possible, and a non-technical graphic treatment of the subject is enjoined. Even if the syllabus be not closely followed, the practical work is in no case to be omitted.

—*New York Tribune*.

"'Archimedes,'" reads the pupil, "'leaped from his bath shouting 'Eureka! Eureka!'"

"One moment James," says the teacher. "What is the meaning of 'eureka'?"

"'Eureka' means, 'I have found it.'"

"Very well. What had Archimedes found?" James hesitated for a moment, then ventured hopefully:

"The soap, mum."—*Judge*.

BOOK NOTICES

AGRICULTURE FOR BEGINNERS, by C. W. Burkett, Professor of Agriculture; F. L. Stevens, Professor of Biology; and D. H. Hill, Professor of English in the North Carolina College of Agriculture and Mechanic Arts. Ginn & Company, Boston. 12mo. Cloth, xii — 267 pages. Illustrated. List price, 75 cents; mailing price, 85 cents.

A very successful attempt to popularize the study of farming, and interest the school children, especially those of rural localities, in the possibilities of field and orchard. Agriculture no longer means the monotonous, unintelligent round of toil practiced by farmers for centuries, but the application of scientific principles and the use of labor-saving machinery. The successful tiller of the soil today is an educated man. He is a botanist, a chemist, a forester, a mechanic, an inventor, a man of affairs. "Agriculture for Beginners" will not make one proficient in any one of these departments of knowledge, but it is well adapted to direct the child's attention to them, and to pave the way for more intelligent farming in the future. It is to be regretted, however, that any space should be given, especially in a book for children, to the culture of tobacco, a weed that is notoriously exhaustive of the soil as well as of no value to mankind. With this exception the book is well deserving of a place in our common schools.

BOSTON: A GUIDE BOOK, by Edwin M. Bacon. Ginn & Co, Boston.

This little volume, which was published with the compliments of the company for free distribution at the National Educational Association held in Boston the past summer, will doubtless prove a popular guide to the city for some time to come. Its information is compact, clear, and trustworthy. Boston's many attractive suburbs receive due attention, and routes, train, and trolley service are plainly shown. It is a book that shows where to go and what to see, leaving to more pretentious works a full description of the various places of interest. Eight pages of color maps, numerous diagrams and other illustrations, as well as a complete index enhance its value.

TEACHING TRUTH, by Mary Wood-Allen, M. D. Wood-Allen Publishing Company, Ann Arbor. Price 50 cents.

Like the other books of this series, some of which have already been noticed in these columns, "Teaching Truth" is an appeal to par-

ents and teachers to answer truthfully and purely the child's questions as to the origin of life. More than this it points the way so clearly that the excuse "I don't know how," no longer holds. It is a question whether that innocence which is merely synonymous with ignorance is ever worth while in an intelligent human being, but since it is certain that the child will get his questions answered by some one, it is the moral duty as well as the privilege of parents to be that "some one" themselves.

A NEW SCHOOL MANAGEMENT, by Levi Seeley, Ph. D., Professor of Pedagogy, State Normal School, Trenton. Hinds & Noble, New York.

The title of this book is somewhat of a misnomer, inasmuch as neither the principles laid down nor the author's treatment of the same can be called new. Long experience in almost every field of pedagogic activity has, however, prepared Dr. Seeley to speak authoritatively on the subject, and his book will prove an undoubted help to the profession, especially to young teachers. While conservative, it is yet well up to date in its treatment of most topics, and the practices advocated are based on sound principles. As the author himself fears, "many of the discussions are commonplace," and all are too long drawn out. The book lacks crispness and vitality. It would be much more readable if non-essentials and repetitions were omitted.

Historic old Park Street Church in Boston was the scene last month of another reception to Mrs. Mary H. Hunt, given under the auspices of the Suffolk County Woman's Christian Temperance Union. Mrs. Livermore and Mrs. Stevenson were similarly honored. Other distinguished guests were Massachusetts' Temperance Governor, John L. Bates, and Hon. John D. Long, Ex-Secretary of the Navy. Mrs. Livermore, as Honorary State President, spoke at length of the work done by Mrs. Hunt and Mrs. Stevenson while abroad this summer. Beautiful flowers were presented to the guests of honor.

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Anatomy, Physiology and Hygiene For High Schools. By Henry F. Hewes, M. D., Instructor in Physiological and Clinical Chemistry, Harvard University Medical School. Price, \$1.00

With experimental work this book gives a connected outline of the processes which accomplish the maintenance of life in the body and of the rules of hygiene which it is necessary to follow in order to facilitate their harmonious action. Chapters are included upon the nature and action of bacteria in connection with infectious diseases, and also upon physical culture and gymnasium exercises.

Elementary Anatomy, Physiology and Hygiene For Higher Grammar Grades. By Winfield S. Hall Ph.D., M.D., Professor of Physiology, Northwestern University Medical School. Price, 75 cents

Treated according to the inductive method, beginning with the easily observed facts of plant physiology and leading by comparison up to human physiology and hygiene. Simple illustrations and experiments, but no dissections, are presented in connection with the physiological facts. A particular feature of the book is the lessons on domestic economy which form a noteworthy contribution to one of the most important problems of sociology.

Intermediate Physiology and Hygiene For Fifth and Sixth Year Pupils, or corresponding classes in ungraded schools. By Winfield S. Hall, Ph.D., M. D., and Jeannette Winter Hall, Special Teacher of Physiology, Berwyn, Ill. Price, 40 cents

The illustrations are a marked feature of this book, including both mechanical diagrams and attractive pictures designed to interest the pupil. Special attention is called to the simple comparisons of the bodies of human beings and of the lower animals. The object of this comparative study is to impress upon the mind of the pupil the unity of nature and to cultivate in him a love and sympathy for the lower animals.

New Century Primer of Hygiene First Book for Pupils' Use. By Jeannette Winter Hall. Price, 30 cents

A simple and attractive presentation of the elementary facts of physiology for pupils of the fourth year grade. The language used is free from technical terms and readily comprehended by the child, while familiar facts are used to emphasize the principles discussed. Brief object lessons in general physiology are given, together with a simple treatment of the most important laws of hygiene. Contains numerous illustrations and useful and practical suggestions.

Oral Lesson Book in Hygiene For Primary Grades. By Henrietta Amelia Mirick, A. B., Assistant Editor School Physiology. Price, \$1.00

A manual for the teacher, containing suggestions for the presentation of the most elementary facts of anatomy, physiology, and hygiene, for the first year. At the end of each lesson are brief memory points summarizing the most important facts. The work is thoroughly planned and made simple and interesting.

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IMPORTANT BOOKS ON NATURE STUDY.

NATURE STUDY AND LIFE

By Clifton F. Hodge, Assistant Professor of Physiology and Neurology in Clark University, Worcester, Mass. With an Introduction by Dr. G. Stanley Hall. 12 mo. Cloth. 514 pages. List price, \$1.50.

"Nature Study and Life" is intended to assist teachers in directing their pupils in nature-study work, and to be used by the children themselves as a reference book. It has twice formed the basis for nature study courses in the Clark University Summer School; it has further stood the more practical test of teachers' institutes in various states; and, finally, its most important suggestions have been tried thoroughly in the schoolroom.

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Vol. XIII

BOSTON, DECEMBER, 1903

No. 4

THE NEW CHRISTMAS

“**D**O you think that the love which has
died for the world
Has not lived for the world also?
Filling man with the fire
Of a boundless desire

To love with a love that shall grow—
It was not for nothing the white Christ was born
Two thousand years ago.

“The love that fed poverty, making it thrive,
Is learning a lovelier way—
We have seen that the poor
Need be with us no more,
And that sin may be driven away;
The love that has carried the martyrs to death
Is entering life today.

The spirit of Christ is awake and alive,
In the work of the world it is shown—
Crying loud, crying clear,
That the Kingdom is here
And that all men are heirs to the throne.
There was never a time since the making of man
When love was so near its own.”

—CHARLOTTE PERKINS STETSON

WHY, WHEN, AND HOW

TEMPERANCE TEACHING SHOULD BE GIVEN IN THE
SCHOOLS

THE first half of the last century witnessed
a remarkable increase of alcoholic and
other narcotic habits among the masses
of the people. The spread of these habits and
their disastrous results accompanied and kept
pace with the rapid extension of communication
and transportation until the swift following con-
sequences led to active efforts to check their
progress.

For nearly half a century heroic efforts were
made to save the people by the time-honored
method of “moral suasion.” Eloquence which
the world has seldom equaled, appealing from
the moral standpoint to every shade of human
emotion was poured out from platforms every-
where. But the per capita consumption of alco-
hol continued to increase.

THE INAUGURATION OF A NEW METHOD

Twenty-five years ago, a new method was
inaugurated, that of scientific investigation and
study of the physiological results following the
use of alcoholic drinks. Of this method, Pro-

fessor Emil Kræpelin of Heidelberg, Germany,
says:

“In the struggle for and against alcohol, the
mightiest weapon will always be scientific inves-
tigation, which, untrammelled by rancour or the
favor of partisanship, seeks to establish facts.”

In the United States, first of all nations, these
facts as to the nature and effects of alcoholic
drinks and other narcotics, in connection with
hygiene, were made a compulsory study in the
public schools of the entire nation. For about
fifteen years this study has been comparatively
universal and results are now beginning to show
themselves. Attention has already been called
to the fact that the per capita consumption of
alcoholic drinks has steadily risen. It is still
increasing somewhat, it is true, but the statistics
of the Internal Revenue Department for 1903
show that during the last eleven years, when this
instruction in the schools had become quite
universal, the gain in the per capita consump-
tion in the United States was only one-third as
great as in the preceding eleven years when this
instruction was just beginning to be introduced
into the schools. That there was any gain at
all can probably be largely accounted for by the
fact that during this time, 1892-1903, we yearly
received on an average 400,000 immigrants
most of whom brought with them old-world
drinking habits.

In Europe, the scientific investigations carried
on in the famous physiological laboratories have
led to the formation of total abstinence socie-
ties whose centers are in the great universities
whence the facts about alcohol there revealed
are being promulgated.

ITS SCIENTIFIC BASIS

The Twentieth Century study of the alcohol
question is to be pursued on a scientific basis
by the whole people. To this all indications
now point.

The nineteenth century opened with every-
body thinking alcohol a food, while the curse of
drink threatened the health and morals of civil-
ization. It closed with alcohol arraigned before
the bar of scientific investigation to answer to
the charge of manslaughter in nearly every civ-
ilized country in Europe. The French Academy
of science, the universities of Germany, Austria,
Switzerland and Belgium are studying the ques-
tion; leading professors in those countries are
taking the witness stand to testify against it.
Russia has organized a commission for an exten-
sive investigation covering the social, legislative

and legal phases. In Germany, there is a society of abstaining teachers, another of abstaining physicians, and of other professions. The late Professor J. H. W. Stuckenberg of Cambridge in a magazine article published shortly before his death said :

"A remarkable literature in favor of total abstinence is being developed under the leadership of these German scientists and physicians, professors of physiology, pathology and nervous diseases, and medical directors and superintendents of prisons, hospitals and insane asylums. Startled by the havoc made by alcohol as revealed by their own observations and by statistics, they have patiently and thoroughly pursued the scientific method in investigating the causes of crime, insanity, suicide, poverty, degradation, ruined homes, individual and social misery, and national danger. The result is that they oppose the prevalent drinking customs, regard moderate drinking as a danger to the drinker and a temptation to others, and are effecting a revolution in the use of alcohol in medical practice."

We have gone further than most European countries in requiring this study in our schools, although there is there a rapidly growing movement in this direction, especially in Germany and England ; while from all their investigation there is coming to us a continuous stream of truth upon this subject. As earnest, child-loving men and women, having at heart the best interests of the children committed to our care, it behooves us all to give careful study to the facts concerning the nature and effects of alcoholic drinks and other narcotics, to be abreast of the researches which are throwing a flood of light upon this question, and to bring to the study of these facts the same candid, unprejudiced minds with which we would approach new facts developed by historical or geographical research.

ITS PLACE IN THE SCHOOLS

A recent report upon this study by a State Commission of educators in Ohio says :

"For many years the youth of our land have been instructed in the elements of scientific temperance. There is no longer any doubt about its value. It is a world recognized fact. The greatest nations have long since reached the conclusion that important social reforms can be wrought with comparative ease, if they are judiciously taught to the vast army of school children.

"Parents and teachers are under obligations to teach the children to form habits of care in the development of all the powers God has

given them. The formation of correct habits in thinking, living, and acting is of supreme importance. If the home and school do not accomplish this, they are in large measure failing in that which is rightly expected of them.

"Scientific temperance teaching is not very different from the teaching of other subjects. If it is teeming with a vitalizing power which not only compels but impels children to form correct habits of living, then we may expect men and women who will possess the highest ideals of man's duty to his fellow men.

"The most effective lessons in hygiene are those taught to pupils in grades below the high school. Habits of life are formed early and it is easier to lead a child into right habits than to correct wrong ones after he is older. It is very important that this subject of physiology and hygiene, including the nature and effects of alcoholic drinks and other narcotics, should be impressively taught in grades, that is, school years, from one to six. Children at this age do not have so many inclinations counter to your teaching ; they are freer to make good resolutions, and in these six years many inclinations are formed which develop into habits of life.

"Get the pupil to grow up strong in body and mind and let the instruction be such as will bring about this desire. The smoking of cigarettes is often begun at a very early age. During the third, fourth and fifth school years is the time for the most effective training against the use of cigarettes.

"Hold up to the children the idea of being somebody in the world. There are grand possibilities for every child that may be realized. There are some things he must do and some things he must not do if he is to amount to much, and the former he must commence to do early in life. He must have a vigorous and wide-awake mind and a healthy body. Heart, lungs, stomach and all organs are working to make of him a success. Is he going to hinder them, and so be his own worst enemy? For example, the blood comes into the lungs to meet the fresh air the body needs. Will he give it poisonous smoke instead?

"The effects of alcohol should also be vigorously presented to pupils 10, 11 and 12 years of age. The thought in the mind of the teacher is to be that he has before him forty or fifty boys and girls whose lives may be of great use to the world if the blighting effects of alcohol and other enemies of body and mind can be eliminated. The desire is to educate a community in which the sentiment will not be simply neutral but positively anti-alcohol.

"Teach also the moral and social evils of alcohol. To pupils 13, 14 and 15 years of age, these topics should be again presented with ad-

ditional argument and explanation. Habit is here a proper subject for frequent talks and discussion. In the whole field of education, no subject is of greater importance. We all form habits of some kind from which it is next to impossible to break away when we grow older. In preparation for this topic make a close study of Chapter VIII of James' 'Talks to Teachers,' and Chapter XIII of Halleck's 'Psychology and Physical Culture.' "

SUGGESTIONS AS TO TEACHING

But it may be asked, How shall we give this instruction?

Let it be remembered that the instruction required by law includes the *whole* subject of physiology and hygiene, of which the special instruction as to alcoholic drinks and other narcotics is but a *part*.

First of all there should be a definite time and place in the school course of study for this subject for at least two or three lessons per week for ten weeks of each of the three primary years, and three or four lessons per week for ten weeks of each year above the primary, through the first year of the high school.

The course of study should be so carefully developed from grade to grade as to avoid unnecessary repetition, and to furnish each year instruction adapted to the child's mental capacity of that year and to the forming of his habits. In the primary grades, each lesson should bring out one or more facts, illustrated by story, picture, blackboard drawing or any other suitable means. The stories should be short, containing few characters and bearing directly on the lesson. Make sure that the children understand the object of the story and can reproduce it in their own words. Sum up on the blackboard the points of the lesson in simple words for the class to review, just as in other subjects. All instruction in the primary grades must, of course, be oral, occupying not more than ten minutes per lesson in the first year, and not

more than fifteen or twenty minutes per lesson in the second and third years. In addition to this regular instruction, incidental teaching should be given whenever fitting opportunity offers, but should never take the place of regular lessons.

Beginning with the fourth school year, pupils should have a very simple text-book as one source of information. This may be used as a supplementary reader, if desired, each lesson being talked over with the class by the teacher just as are other reading lessons. But the book is an important aid, as

with the fourth school year should come a widening in the scope of facts to be taught, while the book insures the pupil's having before him a definite, systematic statement of facts which he is surer of getting and remembering if he finds them on the printed page, in addition to the statement of the teacher. Care should be taken that the book is adapted to each grade, as too advanced a book will be a drawback to success.

At the beginning of each year the teacher should have a clear idea of the subject matter she is to teach during that year, and of the object she is to secure by that teaching. Here is where comes in the advantage of a topical outline of study for all grades, as the teachers in each grade then know what ground has been covered, what they are to cover, and what must be left for succeeding grades.

The teacher should start with a plan of lesson pre-arranged to secure the object she has in mind, and work to that plan. In assigning a lesson, she should have in mind exactly the truths to be brought out and the best method of developing them. One good method for grammar and advanced pupils is to assign, a day or two in advance of the lesson, questions for investigation that will arouse curiosity concerning its chief points. Suggest, at the same time, sources of information in addition to the text-book.

Illustrative facts can often be drawn from current and historic events and characters.



"So hushed the brooding air,
I could hear the sweep of an angel's wings
If one should earthward fare."

Study nutrition in connection with the kinds of food which appear on the table at different times of the year. Connect the anatomy and physiology of man with that of plants and animals, noting points of resemblance and difference.

Make lists of business firms who are demanding abstinence from alcoholic drinks and tobacco on the part of their employees. Strive to create in both boys and girls a desire to become strong, healthy men and women. Show them that when base-ball and foot-ball players are in training they seldom use tobacco or alcohol. Have them think out for themselves reasons for this. Encourage the pupils' taking their books home, in the hope that parents also will become interested.

The teacher is often puzzled how to emphasize the truths of the lesson without seeming to condemn the parents of some of the children. The teaching should be as impersonal as possible, emphasis being put upon the truths to be taught and their application to the child. Narcotic habits of parents make it all the more important that children be plainly taught. Teachers do not discontinue language lessons because some parents use bad English. The faithful teacher of the laws of healthful living will usually find that instead of losing the support of parents, she will be sustained, for parental instinct desires instruction that leads the child up to the highest plane of living.

Sometimes the teacher's words of warning are met by the statement, "My father drinks or smokes and it doesn't hurt him." What is to be said in such a case? Explain that probably when the father was a school boy he did not learn about the evil effects of these things; that the world is growing wiser, and that when the boys of today are men we expect they will be too wise to use alcoholic drinks and tobacco. Show from demonstrable facts the consequences that are always *liable* to follow the use of these substances. Teach the child that if he should begin their use, though he may not feel the effects at first, he can not be sure of escaping the ultimate consequence. Dwell on the fact that having set causes in motion we can not prevent results, and though consequences may not immediately follow, no one can be sure of escaping what has frequently overtaken others. The penalty of violated law is often not immediately apparent, especially to inexperienced observers, therefore the more need of wise teaching of tendencies and ultimate results.

CO-OPERATION OF TEACHERS

During the last few years, the time in which the temperance education laws of this country have been most actively enforced, the statement

has often been carelessly made that teachers are out of sympathy with the movement. Facts tell a different story. To give but one illustration, the wonderfully full and accurate knowledge of the average school child today in matters pertaining to home and personal hygiene, as well as on the nature and effects of alcoholic drinks and tobacco, show beyond peradventure that the great body of teachers are loyally and earnestly carrying out the spirit as well as the letter of these laws.

The following resolution lately adopted by the Marion County Teachers' Institute of West Virginia carries the same rebutting testimony:

We are in hearty sympathy with the Woman's Christian Temperance Union in their earnest effort to have enforced the laws compelling the teaching of scientific temperance, and we not only promise support, but consider unworthy the name of teacher any one who is addicted to the use of narcotics.

That teachers are also feeling more and more the need of well graded books for children's use as well as for their own guidance is well evinced by the resolutions unanimously adopted by the State Teachers' Association of Missouri at their last annual meeting. These run as follows:

Resolved, That we favor a selection of such books or helps for primary teachers as will enable them to conform to the spirit of the law in regard to the proper teaching of physiology and hygiene.

CHILDREN OF GOD

The earth has grown old with its burden of care,
But at Christmas it always is young.
The heart of the jewel burns lustrous and rare,
And its soul full of music breaks forth on the air
When the song of the angels is sung.

It is coming, old earth, it is coming tonight!
On the snowflakes that cover the sod
The feet of the Christ-child fall gentle and white,
And the voice of the Christ-child tells out with
delight

That mankind are the children of God.

On the sad and the lonely, the wretched and poor,
The voice of the Christ-child shall fall,
And to every blind wanderer open the door
Of a hope that he dared not to dream of before,
With a sunshine of welcome for all.

The feet of the humblest may walk in the field
Where the feet of the holiest have trod.
This, this is the marvel to mortals revealed
When silvery trumpets of Christmas have pealed,
That mankind are the children of God.

—PHILLIPS BROOKS.



Primary Lessons

FIRST YEAR

THE BODY TRUNK

IN western California lives a man who is devoting his life to the breeding of plants, and so successful is he that already more than one of our choicest fruits and vegetables bear his name.

His work is twofold in character,—to make the plant individual, unlike others even of the same variety, and to select and improve the best of its variations. The striking feature in all his experiments, he tells us, is that he has never found a flower or even a weed that fails to respond to cultivation. Even the lowliest and most unpromising can “be molded into more beautiful forms and colors than any painter or sculptor can ever hope to bring forth.”

What this man has been doing in a limited area for the plant world, an army of men and women are doing throughout the length and breadth of the land for the vastly more important child world. Every school is a nursery for the development of the child's individuality, and the selection and improvement of those qualities that make for health and character.

That this work is at least as hopeful as the other is attested by the great gain in health and in consequent mental power in schools where proper hygienic conditions prevail, and where the individual child is taught the intelligent care of his own body.

As with the plant, the work must be begun early, before wrong inclinations assert themselves or bad habits have been formed. It must also be simple enough for the child to understand, and so interesting as to enlist his sympathy and co-operation.

He is just beginning to realize that he has a body. This is the time of all others for him to learn also that it is his to make and not to mar.

Lessons on the topic chosen for development this month, the trunk, should be planned to follow lessons on the body as a whole, and such parts as the head and the upper limbs. The child's natural question, regarding every new

thing, “What is it for?” may suggest the subject for the first class exercise:

(1)

USE OF THE TRUNK

What do people usually take with them when they are going on a journey? What do they carry in their trunks?

You have all seen that kind of a trunk, but perhaps you do not know that each one of you has another trunk that he carries about with him all the time, when he stays at home as well as when he goes on a journey. It is called the body trunk.

Where is this body trunk that is always with us? Open your hands and put them on your sides. Can you reach around this trunk? Let us see how large around it is by the tape measure. Now let us find how long the trunk is.

What do we carry in these body trunks of ours?

When people go on a journey they take in their trunks what they will be likely to need while they are gone; clothes, and perhaps books and other things. In our body trunks we carry the things that we need all the time, the things that keep us alive.

What are some of the things that we can never get along without, even for a few minutes at a time? You brought yours to school with you this morning in your body trunk. They were still there when you went out to play. You even take them to bed with you at night, and yet you have never seen one of them.

Put your hand on your left side. What do you feel? What do we call this part of our bodies that ticks on and on as long as we live, like a watch that does not stop or run down?

The heart, then, is one thing that we keep in our body trunks. We could not do without it a single minute of our lives.

There is something else in the upper part of this trunk that we can feel move. Let us all put our flat hands on the front of the trunk, just below the neck. Now we will take a long breath. What part of the trunk moves?

It is the lungs that make the upper part of the trunk swell out when we breathe. We have one on the right side and one on the left. They grow larger when we breathe, so as to take in a good deal of the fresh air which our bodies need. They grow smaller again when we breathe out the air that has gone all through our bodies making them sweet and clean.

Where does the food go that we take into our bodies when we eat our breakfasts or dinners? There is a little bag in our body trunks to hold it, and make it ready to be used by the body. This is the stomach. It is just below the heart. Put your hand on the part of the trunk that holds the stomach.

When you are older you will learn about other things that are kept in the body trunk, but these are enough for us to remember now. Who can name again those parts that we have just been talking about? I will write them on the board:

POINTS TO REMEMBER

We have in our body trunks a heart, a pair of lungs, and a stomach.

The heart and lungs keep us alive.

The stomach holds the food we eat.

The use of the body trunk is to hold these precious parts and keep them from getting hurt.

(2)

PARTS OF THE TRUNK

Our body trunks are not made of wood or leather, like the trunks that people carry with them when they travel. Such material would not do at all for them.

Put your hands on your sides. Do they feel hard or soft? Who knows what it is that makes the sides of the body trunk feel hard? Part of the body trunk is made of bones to give it shape and make it strong.

Find another part of the trunk where there are bones.

How does the backbone help us to stand upright? How does it help to hold the head? Bend the body back and forth. Will it bend in one place or in many places?

Find a part of the trunk that feels soft. These soft parts are called flesh. They cover up the bones and make the body trunk look better.

Over all the parts of the body trunk is a fine soft covering. What is its name?

There is no seam or patch in this skin covering of the body trunk. Every part fits smoothly and perfectly.

Perhaps your trunks at home have tills or trays in them to keep your clothes from getting mussed. Our body trunks have something of the same kind, an upper part and a lower part.

Put your hands on the upper part of your body trunk, the part that swells out when you draw a long breath. This part is called the chest. What did we find is kept in this part of the body trunk?

Put your hands on the lower part of your body trunk, the part that swells out when you eat your dinner. This part is called the abdomen. What did we find is kept in this part of the body trunk?

The body trunk is not a piece of furniture by itself, like the trunks that people keep their clothes in. It is always fastened to the rest of the body.

Find the part of the trunk that joins it to the head. What is the name of this part?

Find the place where the arm is joined to the trunk. What is the name of this part? How many shoulders have you?

What is the name of the part of the body where the leg is fastened to the trunk? Put your hands on your hips. How many hips have you?

Point to each part of the trunk as I name it: back, left side, chest, right hip, breast, left shoulder, abdomen, right shoulder, waist, left hip, backbone, right side, ribs, heart, lungs, stomach.

POINTS TO REMEMBER

The body trunk is made of bones and flesh.

The bones give it shape and make it strong.

The flesh makes it soft and plump.

The backbone helps us to stand erect

The trunk has a smooth, soft covering, the skin.

The trunk is made in two parts or stories.

The upper story is the chest; it holds the heart and lungs.

The lower story is the abdomen; it holds the stomach.

The neck joins the head to the trunk; the shoulders join the arms to the trunk; the hips join the legs to the trunk.

(3)

CARE OF THE TRUNK

If the trunks that we keep our clothes in wear out, we can go to the store and buy new ones, but there is no store in the world that keeps the body trunk for sale. If that wears out we can never buy another, so we must learn how to take good care of the one we have.

A very strange thing about the body trunk is that each one of us has to make his own. Nobody can do it for us. It is very small at first, when we are babies, but it grows as we grow until we get to be men and women.

What are our body trunks made of? and what makes them grow?

They are made out of the food we eat. If we want strong, healthy body trunks, and want them to grow fast, we must eat the right kind of food, such as bread and butter, oatmeal and milk, eggs, meat, potatoes, and apples.

What did you have for breakfast this morning that will help make your body trunk grow? What did you have for dinner? for supper last night?

Sometimes we see boys and girls trying to build the body trunk out of poor materials. Perhaps they eat a great deal of cake and pie or candy. What kind of a body trunk will they have? The body does the best it can with whatever we give it to work with, but it can not make a good trunk of such things.

What kind of a body trunk do you think any one could make out of cigarettes? We see boys every now and then who think it will make them more like men to smoke.

They do not know that instead it will most likely keep them from growing, and give them small, weak bodies. No one can make a strong body trunk out of cigarettes.

Besides giving our body trunks only good material to work with, another way in which we can help them to grow tall and well shaped is always to hold them up straight when we sit or stand. If we get into the habit of rounding the shoulders they may grow crooked. Then we could not stand perfectly straight even when we wanted to do so.

Who can stand tallest now? See how high you can raise the chest. Tomorrow we will try again. Perhaps somebody else will be tallest by that time.

Of course we must keep the trunk clean. It would not do to let a part of the body that holds so many precious things go soiled or untidy. It needs a warm bath with soap once or twice a week, or oftener if we have been in dirty places. If we take it just before going to bed we shall sleep all the better.

POINTS TO REMEMBER

Each one of us makes his own body trunk.

It is made out of the food we eat.

If we want strong body trunks we must eat good food.

The boy who uses cigarettes is putting poor material into his body.

We can make the body trunk grow straight and tall by standing that way.

The body trunk must be kept clean.

We can have only one body trunk, so we must take good care of that.

A PUZZLE STORY

Carl's mother was packing her trunk to go away on a visit. Carl was going with her and his things were in one of the trays.

"I wish I had a trunk all my own," he said, as he watched the packing.

"You do have one," said his mother; "one that was made just for you. No one else can ever keep anything in it, or use it at all.

"Where is it?"

"It goes wherever you go. It reaches from your neck to your legs, and it is just as large around as you are." (What is its name?)

"What do I keep in it?"

"The things that you need to have with you all the time; the things that keep you alive." (What are they?)

"What does it look like?"

"It has a soft white covering. (What is the name of this covering?)

"What is it made of?"

Some of the parts of which it is made are hard, and others are soft. (What is the name of the hard parts? of the soft parts? Why are both needed?)

"Does it have trays like other trunks?"

"It is made in two parts with a partition between, so that the things that belong at the top never get disarranged or mixed up with those at the bottom. (What is the name of each of these parts? What things are kept in each?)

"How do I carry it with me?"

"It is a part of your body." (What joins it to your head? to your arms? your legs?)

"Where did I get it?"

"You are making it every day. It will take a life time to finish it." (What is it made of? What will make it strong? What will make it weak? What will make it well

shaped? What will make it crooked?)

"How many body trunks can I have?"

"Only one. Nobody keeps this kind of a trunk for sale. You must make the one you have last you all your life. (What kind of care must you take of it? How can you take care of the body trunk?)

AUTHORITATIVE QUOTATIONS

THE CHILD'S WEIGHT AS A SIGN OF HEALTH

The weight of growing children is a much more important sign of general health than any other set of objective or subjective symptoms that can be obtained. The family physician who can have placed before him a continuous record of the child's weight, taken at regular intervals, say two weeks apart for several years,



"I wish I had a trunk all my own."

has more definite information than any amount of personal observation as to the child's habits in eating and sleeping, complaints of tired feeling, and the rest that the mother can provide. If parents were instructed more carefully than at present to keep such a record, physicians would not be so much in the dark as to the real condition of children's growth and health as they are at the present moment.—*Westminster Review*.

STANDARD OF WEIGHT FOR GROWING CHILDREN

When children are found to be below the standard of weight they should not be tempted to play or study overmuch, but allowed to follow their inclinations. Rapid growth is of itself as hard work as any ordinary human being can be expected to accomplish with any amount of comfort and without injury to the delicate organism.

At five years of age the child should weigh about as many pounds as it is inches high. As a rule this will not be much over or under forty pounds. Children who come of large families should weigh something more than that. The rate of increase should be about two pounds for every inch of growth, with a tendency for the weight to exceed this standard proportionately rather than to fall below it. When a child is rather heavier in proportion to his height than this standard, it is a sign of good health. If the child is growing rapidly, he should not be allowed to fall much below it, without being made to rest more than has been the custom before. A deficiency of weight in proportion to height is always an unfavorable sign. Any interruption in the progress of increase of weight, especially during the continuance of growth, must be a danger signal that should not be neglected.—*Westminster Review*.

BODILY ATTITUDE AND HEALTH

Crooked positions, maintained for any length of time, as observed by *Health*, are always injurious, whether in sitting, standing or lying position, whether sleeping or waking. To sit with the body leaning forward on the stomach, or to one side, with the heels elevated on a level with the hands, is not only bad taste, but very detrimental to good health. It cramps the stomach, presses the vital organs, interrupts the free motion of the chest, enfeebles the functions of the abdominal and thoracic organs, and in fact unbalances the entire muscular system. Many persons are round shouldered or hump-backed from sleeping upon very high pillows. When one finds it much easier to sit, stand, or sleep in a crooked position than in a straight one, rest assured the muscular system has been

abused, and at once take steps towards rectifying the damage already done.—*Dietetic and Hygienic Gazette*.

DANGER IN TOBACCO FOR GROWING BOYS

There exists no difference of opinion among physicians or scientific men as to the effects of tobacco upon young and growing boys. All agree that none of these ought for the sake of their own development, physical, mental, and moral, to use tobacco in any form. J. M. FRENCH, M. D.

ALCOHOL A HINDRANCE TO DEVELOPMENT

Alcohol is one of the greatest enemies of body and mind. It works destructively upon the young organism and hinders normal development. From the standpoint of hygiene, giving beer to children is to be absolutely condemned.—DR. WALDSCHMIDT, of Berlin.

The use of alcoholic drinks exerts an injurious influence upon the mental and physical development of children and bad habits are cultivated.—DR. FIELDER, of Dresden.

I place special emphasis upon the prohibition of alcoholic drink to children. It is scarcely credible with what levity and thoughtlessness the accustoming of children to the use of alcoholic drinks will very often be initiated and encouraged.—PROF. STRUMPELL, of Erlangen.

CONSTANT CHRISTMAS

THE sky can still remember
The earliest Christmas morn,
When in the cold December
The Saviour-Christ was born.
And still in darkness clouded,
And still in noonday light,
It feels its far depths crowded
With angels fair and bright.

O never-fading splendor !
O never-silent song !
Still keep the green earth tender,
Still keep the great earth strong ;
Still keep the brave earth dreaming
Of deeds that shall be done,
While children's lives come streaming
Like sunbeams from the sun.

O angels sweet and splendid,
Throng in our hearts and sing
The wonders which attended
The coming of the King-
Till we, too, boldly pressing
Where once the angels trod,
Climb Bethlehem's Hill of Blessing,
And find the Son of God.

PHILLIPS BROOKS.

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They who do their souls no wrong,
But keep at eve the faith of morn,
Shall daily hear the angel song,
"Today the Prince of Peace is born."
—JAMES RUSSELL LOWELL.

AN EMPHATIC PROTEST

THE National Woman's Christian Temperance Union Convention, in session in Cincinnati, November 18, unanimously passed by rising vote the following protest against the attacks of the "Committee of Fifty" upon the present compulsory teaching of temperance physiology in the public schools of this country:

Whereas, Certain self-appointed persons under the name of "The Committee of Fifty for the Investigation of the Liquor Problem" have made and circulated in one of their publications, and in press reviews of the same, unwarranted accusations against the legislation which requires the study of temperance physiology by the pupils of every public school in the United States; against the school literature on this subject; and against the results of this study; and

Whereas, These unwarranted accusations are made with the avowed purpose of removing this study, as now required, from the public school system of our country, and

Whereas, We believe that such removal would be a national calamity,

Therefore, be it Resolved, That the attention of the public be called to the following facts:

First,—It is apparent that in seeking opinions upon which they base their objections to this study, the Committee of Fifty misrepresented the amount of time required for this subject, making it appear that 250 hours are required for the study of *alcohol*, while in fact, only 330 lessons, (the equivalent of about 140 hours) distributed through nine years, is the maximum requirement for the *whole study of physiology and hygiene*, not more than one-fourth of which is

ever required to be given to the subject of alcoholic drinks *and all other narcotics*.

Second,—The Committee of Fifty charges that the laws restrict teachers as to methods to be used in teaching this subject. This again is a misrepresentation. The most specific laws simply require that the subject shall be taught all pupils in all public schools; that teachers shall have adequate preparation; and that teachers and pupils shall have the same helps, including well graded books, as in other required branches. The teachers are left absolutely unrestricted, just as in other branches, as to how they shall present the subject.

Third,—The Committee's main points of criticism of the school literature on this subject are, that it teaches that alcohol is not a food but a poison, and that it teaches total abstinence.

An examination of the 800 pages of the Report of the Committee shows that the Committee presents no evidence to prove that alcohol is a food in the sense in which this word is commonly understood. They claim that alcohol is a food because it is oxidized in the body and can furnish energy, but the conclusion that this proves it to be a food is contradicted by such authorities as Professors Abel of Johns Hopkins, von Voit of Munich, and Kühne of Heidelberg Universities, who point out in this very Report of the Committee of Fifty that mere oxidization does not prove a substance to be a food. Other recognised poisons are oxidized in the body, yet are never called foods.

No evidence is presented by the Committee of Fifty to prove that alcohol is not a poison, according to standard definitions of a poison, that is, a substance whose nature it is when absorbed into the blood to injure health and destroy life.

No evidence is presented by the Committee of Fifty that it has secured the repeal of the natural law written in the nature of alcohol which gives it the inherent power, even in small quantities, to create an uncontrollable desire for more; or that any one who attempts the beverage use of alcoholic drinks, even with meals after the day's work is done, can be sure that he will not fall a victim to the alcoholic appetite. In view of these facts, the Committee has not proved the indorsed school physiologies inaccurate in teaching total abstinence.

Fourth,—The public was led to expect that the teachings of the indorsed school physiologies were to be tested by the experiments conducted under the auspices of the Committee of Fifty, but instead, they are compared, for instance, with the conclusion of Dr. Fothergill, an opinion written twenty-three years ago.

Was it because the investigations of the Committee of Fifty did not furnish sufficient evidence

to justify their accusations of the indorsed books, that they were compelled to compare the latter with these old, exploded, medical opinions?

Fifth,—The Committee of Fifty's recommendation that this instruction should be confined to the upper grades would be to postpone it, in many cases, until after cigarette and other bad habits have been formed, and would deprive great numbers who have to go to work before they reach the upper school grades of any warning instruction on this subject. Such a policy would be cruel discrimination against the children of the poor, and suicidal for a government of the people.

Sixth,—Careful review of the experimental work of the Committee of Fifty shows that they have not proved that the beverage use of alcohol in amounts ordinarily termed moderate is safe.

Professor Gruber and others have shown that whether or not one is susceptible to alcohol can not be told until it is too late. "He finds out only by playing a game of chance with his life, which is a dangerous experiment."

Seventh, — The Committee of Fifty, looking for definite results from this system of instruction, turn to old, so-called evidence, gathered from five to thirteen years ago, to sustain their claim that there are practically no good results. In doing so, they ignore the evidence presented by the last census, that during the preceding ten years, when the study of physiology and hygiene had become quite universal, the average length of life in the United States increased by 4 1-10 years, due in part, physicians say, to the better knowledge of hygienic and sanitary laws imparted in the public schools.

It is admitted in our own and other lands, that the teaching in our public schools that alcohol injures working ability has contributed to the greater sobriety of the American workman, and to his consequent increased productive ability, which is one factor in giving to our nation the commercial supremacy it now enjoys.

If the Committee of Fifty had examined the Internal Revenue Reports before publishing their report last June, they would have found that in the last eleven years, during which temperance instruction became quite general, the per capita gain in the use of alcoholic beverages was only one-third as great as in the previous eleven years, when the study was just being introduced. That there was any increase was undoubtedly largely due to the more than 400,000 immigrants who came annually during those years, the majority of whom used alcoholic liquors.

The Committee of Fifty, in claiming that there are no results from this instruction has ignored testimony as to its beneficial results upon individuals, homes, and communities, shown by careful canvass of one of our largest states (New

York), testimony which was placed in the hands of every member of the Committee of Fifty nearly eight months before the publication of their report.

In conclusion, it should be said that the Report of the Committee of Fifty is an unjustifiable attack upon the system of temperance instruction that has helped



"They who to their childhood cling, and keep their natures fresh as morn,
Once more shall hear the angels sing, 'To-day the Prince of Peace is born'."

make our nation the admiration of the world, while the charge that the teaching of the indorsed school physiologies is unscientific is unsustained by any evidence brought forward. While there is much valuable material in the experimental work reported by the Committee, their attacks upon this instruction are unwarranted by the facts and unjustifiable from the standpoint of principle. Their defense of moderate drinking is subtle and sophistical. As representatives of the mothers of the children under this instruction, who know the good it is doing, we utter our solemn and emphatic protest against any attempt to minimize or remove it. We agree with the Committee of Fifty that they will find it no easy task to do so, and in such an effort they will be compelled to reckon with the mothers and best citizens of the nation.

Grammar
Lessons

FOURTH YEAR

THE BRAIN AND NERVES

EXPERIMENTS of the Swiss scientist, Dr. Forel, with ants, go to prove that the brain of the worker shows a much better development than that of the drone or even that of the queen ant.

One has only to look at the faces of the people he meets to realize that the same is true of human beings also. Those who have nothing to do are neither such clear thinkers nor such capable workers as those who habitually use the brain to plan and the body to execute some form of useful work.

By the time the child reaches the grammar school he is as well aware that he has a mind as that he has a body. He is now ready for the further thought that the two must act together to secure the best results, and that each can be trained to ever greater efficiency.

No man knows what the mind is nor how it does its work, but even a child can grasp the thought that there must be a controlling system of the body to direct its many movements and take care that every organ acts at exactly the right moment. He can understand equally well that the better trained this controlling system is the more perfectly it can do this work. Looked at in this light, the subject of the brain and nerves is by no means too abstruse for pupils of this grade, although at the same time it suggests problems that the greatest scholars have never solved.

With these thoughts in mind, let the first topic for present class work be

THE GENERAL MANAGER OF THE BODY

Have the class name kinds of work they have seen going on that require many hands. Some of the children can tell of large buildings going up, of paving and street cleaning, or of work in factories, offices, and stores. Others will know about farming and gardening, mining, or lumbering.

How is the work looked after in each of

these cases? Does every workman work as he pleases, doing only what he happens to want to do and beginning and stopping at any time he likes? What do we call a man who directs the work of others, and sees that they do it at the proper time and in the right way? Why is such a man needed in every large business?

The body also must carry on many different kinds of work at the same time. What are some of the things it has to do?

Bring out reasons why each kind of work done by the body must be attended to at just the proper moment. Why, for instance, must the stomach begin to digest food as soon as it receives it? Why must the heart go on beating every day and night of our lives? Why do our eyes shut as soon as anything comes too near them? Why do we draw back our hands when they touch a hot stove?

It is plain that the body needs some general manager to direct all these different kinds of work, and to see that each is done exactly when it should be, and in just the right way. What is the name of this general manager of the body? Where is his central office?

The overseer in a factory moves about from one place to another to find out how all parts of the work are going on, but the general manager of the body, the brain, never leaves his office. The only way, then, this manager can direct the work of the body is to have connecting wires or lines, over which messages can be sent back and forth, between the central office and every other part of the body.

This is exactly the way the matter is arranged. What is the name of the connecting lines over which the messages pass? What do they look like? Refer the class to their physiologies on these points.

Messages can be sent either way over a telegraph or telephone wire, but two sets of nerves are needed for work of this kind in the body, one set to bring messages from all parts of the body to the brain and the other to carry back the answers. So we find the nerves arranged in pairs.

If you see a building on fire, which of these two kinds of nerves carries the news to the brain? Which takes a message to the muscles of the legs to run towards it?

What kind of nerves tells the brain that the school bell rings? that a dog is barking? that a door opens?

What nerves tell the muscles of your arm and hand to catch a ball? to eat your dinner?

THE GENERAL MANAGER'S HELPERS

Many kinds of business are so large that the general manager can not do all the work. In such cases, he looks after the most important

matters and men under him are chosen to attend to the rest.

This is the case with the brain. If it had to direct every act of the body it would have altogether too much work to do. It would take all one's time to see that he breathed often enough, and that his heart did not stop beating, and that the food did not stay in the stomach instead of being digested and sent all over the body to strengthen and nourish every part. We could think of nothing else but how to do the things that keep us alive, and we should not dare to go to sleep.

One of the brain's most important helpers is the spinal cord. We may call it the first assistant manager. It, too, has an office of its own which it never leaves, and from which it receives and answers messages all day long. Where is this office? With what parts of the body is it connected? Trace on a physiological chart the course of the most important of these nerves after they leave the spinal cord.

One of the duties of this assistant manager is to gather up all these nerves and connect them with the brain. Find on the chart the place where the end of the spinal cord enters the skull and joins the brain.

Bring into class the neck and backbone of a chicken, or the backbone of a fish. Break it apart at the joints and show the spinal cord. How is this protected? Think of reasons why the spine is made of many bones instead of one long bone. Why does the spinal cord need to be protected so carefully? How is the brain protected?

At the top of the spinal cord is the office of another helper of the brain. Its work is to receive and answer messages that have to do with breathing, and with how fast the heart shall beat.

TRAINING OF THE BRAIN AND NERVES

No matter how capable the manager of any business may be when he first takes up the work, we all know that he will be much more efficient after he has held the position for a time and has grown familiar with all its details.

The same thing is true of the brain and nerves. The very finest brain in the world can be made far better by training, and you can see that it is even more necessary for the brain and nerves that do not seem so good at first to be well trained.

A business manager gets a large part of his training by doing the same things over and over again. So do the brain and nerves. When you were learning to ride the bicycle, the brain did not know just what messages to send to the muscles of your arms and legs and body. It had to give its whole time to the matter;

even then it sometimes sent wrong messages, and you fell off. But after a little practice it never made a mistake, and now, perhaps, its assistant manager can send the right messages, and you can use the brain to think about something else as you ride.

Mention other things that you can do without having to think about them. Why could you not always do them as easily as now?

Name things that you would like to do easily and well. What is the only way in which this can be done?

A business manager can decide what things he wants to be able to do especially well, and practice doing them until he becomes expert. We too can decide what we want our brain and nerves to know best how to do, and they will do it. If we keep on choosing to have them send messages to our muscles to play fair, or to work quickly, they will get so used to it that they will never send the opposite kind of messages. If we decide over and over again to have them send messages to our eyes and ears to see and hear things that we want to remember, they will soon be able to send such messages of their own accord.

It is just as true that the brain will keep on sending wrong messages if it is taught to do so at first. This is one reason why it is so hard for people to stop smoking even after they have found out that it hurts them. The brain has got used to sending messages to the hand to take a cigarette, light it, and put it into the mouth; and messages to the mouth to begin to smoke, and it can not easily change.

Another reason is that the poison, nicotine, in tobacco often so dulls the brain of the boy who uses it that it does not always know what messages it should send. Then it makes the nerves so shaky that they can not carry any messages properly.

Have the pupils find from their physiologies, or in any other way they can, what tobacco often does to the memory.

Why is it easy to keep on taking a glass of beer or cider after one has formed the habit? What is the harm of taking a little of such things? Why does the boy who drinks or smokes when he feels like it usually do poor work in school? Why does he have a hard time to get a place to work after he leaves school?

Show the class a dollar bill. It was only a common piece of paper until the government had set its stamp upon it. Now it is money, worth exactly what it calls for.

Write on the board Schiller's saying, "Every man stamps his value on himself," and leave with the class the thought that each one of them has the privilege of doing for himself just what the government does to the paper it makes

into money. It can take the same piece of paper and make it worth one dollar or a thousand dollars. So we can make ourselves worth much or little according to the stamp we put upon ourselves by the habits we form and the way in which we train these managers of the body, the brain and nerves.

AUTHORITATIVE QUOTATIONS

SELF-CONTROL AND SELF-RESPECT DISORDERED BY ALCOHOL

The most recent acquisitions in adult life are the power of self-control and the feeling of self-respect which are manifested in regard for the conventions of life and in the prudence which leads one to avoid many procedures which in earlier life he might have indulged in without reproach. And under alcohol these are the first mental processes to be disordered. *In vino veritas*, in intoxication the natural man is exposed, stripped of the trammels of convention and robbed of the fruits of experience and education.—PROFESSOR A. R. CUSHNY, M. D., Ann Arbor, Mich.

ALCOHOL IS A POISON WHICH ACTS ON ALL THE ORGANS OF THE BODY

Alcohol is a poison which acts on all the organs of the body and produces a condition of degeneration in them. It has been called the very "genius of degeneration." It is on the delicate structures of the brain and nerves that the most disastrous results are produced. Belonging to the class of poisons known as narcotics, it acts on these structures like an anæsthetic, lessening the power of thought and the perfection of the senses.—W. GRIMSHAW BIGGER, M. D., M. R. C. S.

ALCOHOL PREDISPOSES TO DISEASE

The inhibiting and narcotizing influence of alcohol on the highest functions of the brain appears in the loss of control, the blunting and effacement of all the higher affections and aspirations, and the deadening of the moral sense, of which the outward and visible signs are the

squalid homes, the crowded workhouses, prisons, etc., and the poverty and degradation we see around us, and which are all too familiar.—W. GRIMSHAW BIGGER, M. D., M. R. C. S.

LIGHT ALCOHOLIC DRINKS A POISON FOR THE HEALTHY CHILD

Unquestionably, alcohol in every form, even as light beer or light wine, is poison for the healthy child. Older children, through spirituous drinks, lose mental as well as physical vigor. They become precocious, deficient in study, incapable. Their character is frequently depraved; once gentle and tractable, they become through alcohol, irritable, excitable, unruly.—DR. L. THOMAS, Professor in the University and Director of the Medical Polyclinic in the Hilda-Child's Hospital of Freiberg.

BRAIN EXERCISE MEANS INCREASED MENTAL POWER

Other things being equal, a heavier brain implies greater mental power. . . . At the bottom of the scale stand those who are engaged in the manufacture and sale of alcoholic drinks who are apt to do more or less drinking themselves. . . . Weight of the brain may be increased by the direct exercise of its own function, men of mental training

showing, as a rule, greater brain weight than others.—DR. H. MANTIEGKA, in *Proceedings of the Royal Scientific Society of Bohemia*.

SOCIAL EFFECT OF LIQUOR AN INTOXICATION

The social effect of wine and of beer, the mental enjoyment of society, is nothing else than intoxication of the brain.—DR. A. FOREL.

It is only for thirty-six hours of the 365 days that all people remember that they are all brothers and sisters, and those are the hours that we call, therefore, Christmas Eve and Christmas Day.

And when they always remember it . . . it will be Christmas all the time.—EDWARD EVERETT HALE.



"Up and down the skies
With winged sandals shod,
The angels come and go, the messengers of God."

BOOK NOTICES

WAYS OF THE SIX-FOOTED, by Anna Botsford Comstock, B. S., Lecturer in Cornell University Extension. Price, 40 cents, Ginn & Co. Boston.

Under this title Mrs. Comstock has given fascinating glimpses at ten different forms of insect life. No attempt has been made to confine the stories to the results of original and personal investigation, yet the writer has evidently been a close observer and has added some new facts to those which have heretofore been given to the public. Nearly all the stories cover an entire season or longer in time, hence are more interesting to read than to attempt to verify by actual observation. The book contains many beautiful half-tone pictures and will furnish interesting material for reading aloud to children from ten to fourteen years of age. Most of the stories have appeared singly in *Saint Nicholas* and other magazines, but are none the less welcome in book form.

INSECT FOLK, by Margaret W. Morley, 45 cents. Ginn & Company. Illustrations by the author.

A more elementary work than the preceding, and far more detailed. The plan of the book calls for close observation by children of the more common insects, under the direction of a teacher. Sufficient material is given for one or two years' work with such time as is usually allowed for nature study. It is suggestive to the teacher as to how to take up the study of insects, and more valuable for this purpose than as a handbook for pupils. Mrs. Morley is already favorably known by her previous books, "Seed Babies," "Love and Life," etc.

NATURE STUDY IN ELEMENTARY SCHOOLS, a Manual for Teachers, by Lucy L. W. Wilson, Ph. D., head of the Biological Laboratories in the Philadelphia Normal School for Girls. The Macmillan Company, London and New York.

An admirable help to teachers in preparing a course of nature study for children during the first four years of school. Work is planned on plants, animals, stones and the weather, and arranged for each month of the school year. Copious references to suitable literature, story, myth, and poem, are given, also valuable suggestions as to method. With the aid of such a handbook even those teachers who have little previous knowledge of the subject should be able to guide children in their study of nature at first hand and inspire them with loving interest in the phenomena that lie close about them. Synopses by subjects and by months, as well as a full index, are a feature that will be thoroughly appreciated by the busy teacher.

THE ELEMENTS OF PHYSICAL GEOGRAPHY, by Edwin J. Houston, A. M., Ph. D., Emeritus Professor of Physical Geography and Natural Philosophy in the Central High School of Philadelphia. Eldredge & Brother, Philadelphia.

Dr. Houston's Physical Geography has been before the public for more than a quarter of a century, and the many new editions which have been published since that time are perhaps the best proof of its value. The present, duodecimo, shape of the book makes it much more convenient to handle than in its first form, and a better sense of proportion in the subject matter is noticeable. It is accurate, and may be regarded as standard in the subjects of which it treats. Its many excellencies, however, can not disguise the fact that it is too advanced a treatise for the first year high school pupils by whom it is studied in most schools, and that to them it will likely prove uninteresting, unless carefully explained by an enthusiastic teacher who is thoroughly conversant with the subject. It is to be regretted that the ideal book in this most attractive study has not yet appeared.

THE FOUR EPOCHS OF WOMAN'S LIFE, by Anna M. Galbraith, M. D., Author of Hygiene and Physical Culture for Women. With Introductory Note by John H. Musser, M. D., Professor of Clinical Medicine, University of Pennsylvania. Cloth, \$1.50 net. W. B. Saunders & Company, Philadelphia.

A thoroughly scientific yet popular treatise on subjects of which every woman should have timely knowledge. Ignorance in the past of the laws of nature have brought severe penalties in sickness and suffering which might well have been avoided by a different manner of living. The thorough acquaintance with these laws which this volume makes possible should be of widespread benefit to woman's health and consequent happiness. It is clearly and modestly written, and will be readily intelligible even by those who are for the most part unfamiliar with medical terms.

CHRISTMAS

Sing, Christmas bells!

Say to the earth, this is the morn

Whereon our Savior King is born;

Sing to all men—the bond and free.

The rich, poor, the high, the low.

The little child that sports in glee,

The aged folks that tottering go,

Proclaim the morn

That Christ is born

That saveth them and saveth me.

—EUGENE FIELD.

PRACTICAL HEALTH HINTS

THE CLOSED WINDOW

The absolute importance of a sufficient supply of pure air to all persons under all conditions is a subject upon which we never lose an opportunity of laying stress. A hardihood of the vaso-motor system, if not of the body generally, is certainly obtained by the healthy person who habitually exposes himself freely to fresh air and the daily cold bath.

In private life there is no excuse, except among the poorest, for deficient quantities of fresh air. Fresh air and sunlight are the great natural germicides. Medical men must constantly teach the public that if only these two are constantly sought they will furnish a preventive that will do away with the need for the cure now so often sought in vain in an open-air treatment. The open-air treatment is wanted in every day life. It can be so largely introduced as to save thousands from the necessity of giving up their lives to curing the tuberculosis which they never would have contracted had they indulged earlier in fresh air.—*London Lancet*.

POISON-CHARGED AIR

The air that is so necessary for our life may become a swift messenger of death. In summer, when the room becomes oppressive from the heat, its very condition suggests the opening of windows. In winter, the air is very much more likely to be laden with poisonous gases, but because it is warm this important fact is generally overlooked. However, poison-charged air will kill as readily at one temperature as at another. Hence, every living room should be so arranged that the fresh air can have free entrance. It should come in near the floor, already heated, or if it must come in cold, some contrivance should be placed at the top of the window-sash by means of which the cold air current will be directed upward toward the ceiling and so diffuse downward uniformly all over

the room, instead of descending like a waterfall over the window, thus producing unpleasant draughts, and tempting one to close the outlet entirely. It does not require much ingenuity to arrange some means of carrying off the foul air. A wooden box extending along the side of the chimney up to its outlet through the roof will generally be sufficiently heated to create an upward draught. Openings can be made in this shaft so that it will serve as an excellent escape for foul air. *Dietetic and Hygienic Gazette*.

DESIRABILITY OF ENLARGED BREATHING CAPACITY

Enlarged breathing capacity is desirable for many reasons. It not only insures an abundant supply of oxygen, which may be called its direct effect, but indirectly it produces results of great aesthetic value. It deepens and broadens the chest, causing the figure to become more erect, the step more elastic and vigorous, and the carriage of the body more pleasing and graceful. Respiratory capacity may be increased by the habitual use of any measures that will promote chest expansion and induce deep and full breathing. Respiration, as far as the air supply is concerned, is the servant of the blood; it neither recognizes nor works for any other master. C. H. PATCHEN, M. D., in *Dietetic and Hygienic Gazette*.



"All babyhood he holdeth,
All motherhood enfoldeth,—
Yet who hath seen his face."

WINTER TREES

Across the sky, across the snow,
The sober rooks are winging slow;
Gay rushes in the rush-fringed pool
And winter trees are beautiful.

The West is now a garden close,
Pink roses and a golden rose,
With amber and with tender green,
To let the throbbing stars between.

KATHERINE TYNAN.

BOOK NOTICES

PSYCHIC LIFE AND LAWS, by Charles Oliver Sahler, M. D. Price \$1.50. Fowler & Wells Co., London and New York.

The aim and significance of present psychical research are well set forth in this modest volume, together with many practical demonstrations of psychic phenomena. While the reader may or may not agree with Dr. Sahler's theories as to the nature of mind and soul in their relations to the physical body, there is no question but that the tendency of the time is away from dependence upon the efficacy of drugs and toward the substitution of thoughts of hope and health for those of discouragement and disease. In so far as the book exemplifies this idea, and it does so very largely, it will be welcomed by an increasing number of readers.

A BROADER ELEMENTARY EDUCATION, by J. P. Gordy, Ph. D., LL. D., Professor of the History of Education in the School of Pedagogy, New York University. Hinds & Noble, New York.

Starting out with the conviction that there can be no fundamental study of education that does not seek to ascertain the end education should strive to reach, and that teaching should be based on definite notions as to these matters, the author has clearly set forth his views and given many practical suggestions as to public school courses of study, the educational value of most of the ordinary branches, and of school management. It is a matter of regret, however, that in his excellent chapter on nature study he makes little or no reference to the marked educational and sanitary value of the present system of physiology and hygiene, a study that is revolutionizing personal and home habits and contributing to the noteworthy increase in the average length of life.

THE SHIP OF STATE, by Those at the Helm. Ginn & Company, Boston.

A reprint in book form of a series of valuable articles on legislative, executive, and judicial topics which have appeared from time to time in the *Youth's Companion*. As each is written by a man eminent in the department he here represents, the series may be considered authoritative. It has the further advantage, not always characteristic of state papers, of being extremely readable. The young student of civil government will find this an admirable supplement to the ordinary reference books, and should be able to gain from it a picturesque insight into many phases of government life that often would not otherwise be obtainable. Type and illustrations are excellent.

CHRISTMAS PEACE

The meadows gleam with hoar frost white,
The day breaks on the hill,
The widgeon takes its early flight
Beside the frozen rill.
From village steeples far away
The sound of bells is borne,
As one by one each crimson ray
Brings in the Christmas morn.
Peace to all! the church bells say,
For Christ was born on Christmas Day.
Peace to all.

Here some will those again embrace
They hold on earth most dear;
There some will mourn an absent face
They lost within the year.
Yet peace to all who smile or weep
Is rung from earth to sky;
But most today to those who keep
The feast with Christ on high.
Peace to all! the church bells say,
For Christ was born on Christmas Day.
Peace to all!

—R. A. GATTY.

His, not mine, are the gifts; and only so far can
I make them
Mine, as, in giving, I add my heart to whatever
is given.

—LONGFELLOW.

THE ARGOSY

Cruising across the sea of Earth, the Plow
Leaves the long, furrowing wake behind her bur-
rowing prow.
No cargo lades her, yet her cruise shall be
More golden than the gain of olden argosy.
—EDMUND VANCE COOKE, in *The Delineator*.

Uncle Charles—"Boys, how can you associate with that Binks boy? I understand he's the worst scholar in the school."

Willie—"Well! If it wasn't for him, me or Tommy 'ud be at the foot of the class."

—*Chicago Daily News*.

PHYSIOLOGY TOPICS FOR JANUARY

PRIMARY—Parts of the Body used in Work and Play; Hands, Arms, Fingers. Exercise and Rest. Growth and Repair. Needs of the Body. Food. Rules for Eating.

INTERMEDIATE—Muscles. Bones. Food. The Blood and its Work. Nervous System.

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With experimental work this book gives a connected outline of the processes which accomplish the maintenance of life in the body and of the rules of hygiene which it is necessary to follow in order to facilitate their harmonious action. Chapters are included upon the nature and action of bacteria in connection with infectious diseases, and also upon physical culture and gymnasium exercises.

Elementary Anatomy, Physiology and Hygiene For Higher Grammar Grades. By Winfield S. Hall Ph.D., M.D., Professor of Physiology, Northwestern University Medical School,
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Intermediate Physiology and Hygiene For Fifth and Sixth Year Pupils, or corresponding classes in ungraded schools. By Winfield S. Hall, Ph.D., M. D., and Jeannette Winter Hall, Special Teacher of Physiology, Berwyn, Ill.
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THE CHILDREN OF TODAY WE SHALL HAVE SAVED THE NATIONS TOMORROW

IF WE SAVE

• CONTENTS •

	PAGE
The March of Progress	65
Primary Lessons—Second Year—Exercise and Rest	68
Grammar Lessons—Fifth or Sixth Year—The Blood	72
Editorials	75
The Immigration Peril	76
Temperance Education in the Middle States	78
Physiology Topics for February	80

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JANUARY, 1904

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No. 5

A SONG OF HOPE

BACK of the gloom—
The bloom!
Back of the strife—
Sweet life,

And flowering meadows that glow and gleam,
Where the winds sing joy and the daisies dream.
And the sunbeams color the quickening clod,
And faith in the future, and trust in God.

Back of the gloom—
The bloom!

Fronting the night—
The light!
Under the snows—
The rose!

And the vales sing joy to the misty hills,
And the wild winds ripple it down the rills;
And the far stars answer the song that swells
With all the music of all the bells!

Fronting the night—
The light!

—FRANK L. STANTON.

THE MARCH OF PROGRESS

WHAT SCIENTIFIC TEMPERANCE INSTRUCTION IN
THE SCHOOLS HAS HELPED DO FOR OUR COUNTRY

THE child is born who will see the last
legalized brewery and saloon go from
the United States if the temperance people
now do their part.

The reason for this assurance is found in the
following parallel between cause and effect:

In 1882, with the enactment of the first law
requiring the study of physiology and hygiene,
including the nature and effects of alcoholic
drinks and other narcotics, by all public school
pupils, a new method which is now universal
was introduced into the temperance efforts of
this country.

THE SUPREME COURT DECLARES ALCOHOL AN OUTLAW

In 1890, the Supreme Court at Washington,
in response to the demand for compensation
for a revoked license to sell alcoholic drinks,
handed down this decision:

The injury from alcohol "first falls upon the
drinker in his health, which the habit under-
mines, in his morals which it weakens, and in
the self-abasement which it creates. As it leads
to neglect of business and waste of property

and general demoralization, there is no inherent
right of a citizen to sell intoxicating liquors by
retail; . . . it is not a privilege of a citizen of
the state or of the United States."

Thereafter, whoever in the United States en-
gaged, or shall engage in the liquor business
does so at his own risk, with the full knowledge
that a community, if it so decides, has the
right to prohibit it, and that for such prohibition
he can claim no compensation whatever.

The scientific reasons for the demoralization
caused by alcohol and the necessity of teaching
these reasons to the young had at this time been
presented to Congress and two-thirds of the
state legislatures in the country, and had led in
each case to the enactment of laws requiring
this study. How much influence this may have
had with the Supreme Court can not, of course,
be proved, but an ex-United States Senator of
national fame, a lawyer, says:

"The right to prohibit the sale of alcoholic
drinks is based on the decision of science that
alcohol is not a food but a poison." He adds:
"I doubt if we should have had the Supreme
Court decision which brands alcohol as an out-
law by nature, if we had not had ahead of it scien-
tific temperance instruction in the public schools
of two-thirds of the states. If all science can
say against alcohol is that it is a 'very expensive
food,' a 'technical food' or an 'academic food,'
as some are saying, the courts could not say how
much a man shall pay for his food or whether
that food shall be of the technical or academic
sort. But the fact that science proves that al-
cohol is a poison establishes its status as a pro-
hibitible substance. Whether the right to pro-
hibit it is maintained, and is put into extended
practice in this country where the people are
the source of power will depend upon how
thoroughly the fact that alcohol is not a food
but a poison is instilled into the minds of the
young through the schools."

BUSINESS BANS ALCOHOL

By 1897, the entire country, with the excep-
tion of four states, was under temperance edu-
cation laws. Results, toward which other tem-
perance efforts had aimed, but which without
scientific temperance instruction in the public
schools they had not secured, now began to be
apparent.

In 1897, when sixteen million children were
under temperance education laws, a daily paper
printed the following statement:

"The demand of the times is that whether a man is to run a bank, a railroad locomotive, or a political caucus, he must be at his best, and that is impossible when he is under the influence of the stuff whose certain tendency is to put him at his worst. An increasing number of occupations is being quarantined against the man who drinks."

THE LAST CENSUS SHOWS LENGTHENED LIFE

In 1900, the returns of the twelfth census showed for the ten years then closed a gain of 4 1-10 years in the average length of life in the United States. The widespread teaching of physiology and hygiene in the public schools has greatly helped in securing the wide dissemination of sanitary knowledge which physicians admit has been one of the chief factors in bringing about the above result.

DECLINE IN THE PER CAPITA GAIN IN THE CONSUMPTION OF ALCOHOL

In 1901, nineteen years from the passage of the first statute of this kind, the last temperance education law was enacted. The study had been largely required for ten and more years before. In 1902, the United States Internal Revenue Report showed that the per capita gain in the use of alcoholic drinks in this country from 1891 to 1902 was only one-third what it was during the preceding eleven years, before scientific temperance instruction was as universal as now, showing that this education is influencing, through their children in the public schools, the habits of the people. That there was an increase at all during the last eleven years was undoubtedly due to the fact that during this period we were receiving annually an average of 400,000 immigrants, the majority of whom brought with them old-world drinking habits.

The same census report showed also that there had been a decline in the use of distilled spirits and of the diseases due to their use, as compared with previous reports.

THE ARMY QUARANTINED AGAINST ALCOHOL

In 1901, the bill, now a law, prohibiting the sale of beer or alcohol in any form to our soldiers in army posts or canteens was pending in the United States Senate. Senator J. H. Gallinger, M. D., in his masterly speech in support of this bill, quoted at length passages from one of the indorsed school physiologies showing the harmful effects of beer. Scientific temperance teaching in the schools of the nation helped create the public opinion which demanded and secured the abolition of the sale of alcoholic drinks in the soldiers' quarters.

SOBRIETY A FACTOR IN SUCCESS

By 1903, business was so largely prohibiting the use of alcoholic drinks to employes, that the effect upon the rank of the United States in the world's commerce was already evident. One cause for this, the greater sobriety of American workmen as compared with those of other countries, is thus accounted for by an Englishman who says in the press of his country:

"Brother Jonathan with his usual acuteness has grasped the necessities of the situation. . . . In the United States, scientific temperance teaching is practically universal in the elementary schools. It was there early recognized that 'the star of hope for the temperance reform stands over the schoolhouse.'"

Another Englishman, writing on the same topic, says:

"The result is that the properly instructed are entering into their inheritance of the commercial supremacy of the world."

MEN DO NOT DRINK AS FORMERLY

A writer in *The World's Work* reports a decline in the importation of champagne as evidence that the nation is not becoming enervated by luxury. The secretary of an influential men's club in a large Pennsylvania city says, "The bar at our club that used to be very profitable does not pay expenses. Men do not drink as they used to."

Results at home and opinions abroad thus justify the conclusion that scientific temperance instruction as a part of the study of physiology and hygiene by all pupils in all the public schools is, as the doctors would say, "an indicated preventive" for the malady of intemperance. How old the child now living will be when he sees the last legalized saloon and brewery go from our country depends upon the performance by the citizens of this republic of

THE DUTY OF THE HOUR

That duty is to watch and guard at every point the best enforcement of these temperance education laws that have so effectually helped in securing the above results. The National Congress and the state legislatures have provided the legislation that furnishes the opportunity. A good school literature on this subject, beautifully graded to the capacities of all classes of pupils is available. Teachers as a rule are ready to do their part when given the necessary means and aid.

ESSENTIAL STEPS IN THE ENFORCEMENT OF THESE LAWS

1. The adoption of a course of study that

will give the necessary time and place to the topics that should be developed in each successive grade.

2. Good, well-graded text-books as one source of information for pupils using books in other subjects.

3. The *Oral Lesson Book* with its illustrative lessons in the hands of primary teachers, and the *SCHOOL PHYSIOLOGY JOURNAL* for all teachers as aids in instruction.

4. Examinations or tests for promotion as in other subjects.

The speedy redemption of our country from bondage to alcohol depends upon faithful performance of these duties, thus meeting the requirements and improving the opportunity provided by this legislation. Opportunity is God's command.

MARY H. HUNT.

HYGIENE

Hygiene aims at the establishment of the surroundings and outward conditions which the human body requires for its well-being, and at the removal of deleterious elements. Hygiene provides air and light, as required by the organism, regulates the periods of activity and rest of the body and its parts, inquires into the sanitary condition of our surroundings, enforces cleanliness of the surface of the body, examines into the manner in which our bodies are clothed, and removes all external influences which might impair the integrity of the body, or any part.—OTTO JUETTNER, A. M., M. D., Ph. D.

IN WINTER

The winter day is strong and pure

Above the hills of iron woods,

I feel the mighty cold immature

My soul in deep and patient moods.

What matter though the dreams of spring

Do never wake life's tender bloom?

What though the seasons' moulds shall bring

For me, for me, but one gray gloom!

There's yet a gift that I would own—

Life's ancient strength, austere, divine,
Like something in the ice-girt stone,

And something in the wind-swept pine.

A power to praise the winter stars

Though all my veins be frost repressed,

To bear the burden and the scars

And shield some snowbird in my breast!

—IRENE PUTNAM.

SUNRISE MAGIC



"I'm little January.
Perhaps you do not know
How far I've come to greet you,
Across the fields of snow."

A LONG the silent,
sleepy street
The houses, gray
and old,
Bloom into castles, ruby
peaked,
Their windows paned
with gold;
And rose lights flicker
where but now
Were shadows, deep
and cold.

The shafts of ashen
smoke that swept
From chimneys, tall
and grim,
Now wind, in coils of
violet
And purple, soft and
dim:
Then roll away in broken
wheels,
With amber spoke and
rim.

The sun's red wand has
made a court
Of every barn and
byre,
And with a single flash-
ing gem

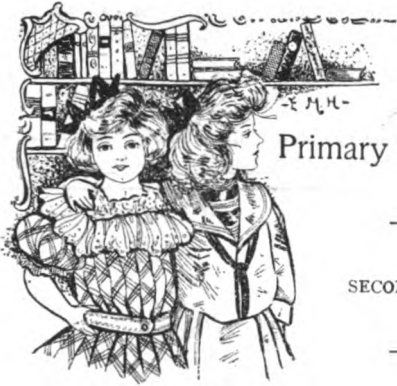
Has tipped the village spire,
And turned the snowballs on the lawn
To balls of carmine fire.

—HATTIE WHITNEY in *Youth's Companion*.

"The gospel of intelligent hard work is the gospel that pays."

Mother: "Johnny, how is it you stood so much lower in your studies in January than you did in December?"

Johnny: "I don't know, mother, unless it is because everything is marked down after the holidays."—*Ram's Horn*.



Primary Lessons

SECOND YEAR

EXERCISE AND REST

FRESH proof is continually at hand that the child with stout muscles, steady nerves, and acute senses is also the one who earns most easily. Mental growth, then, must go hand in hand with physical development. It is not a thing to be cultivated apart from and at the expense of bodily welfare.

Exercise has been called the "mother of the brain." Furthermore, in the words of an English writer, "Every play and sport worth the name develops not merely strength, endurance, and sweetness, but also alertness, quickness of response, coolness, balance, wariness, and judgment that is both sound and swift."

The playgrounds springing up on the site of condemned tenements in large cities have already demonstrated their value in the improved moral as well as mental tone of the neighborhood. Opportunities thus provided on a small scale for the very poor should be open to every child. Even inexperienced teachers can see to it that the children under their care have a place in which to play, with freedom to use their limbs as they choose. They can also so plan the work of the day that mental and physical exercises shall alternate, giving exercise to every muscle as well as to every brain cell.

Just as naturally should come about regular periods for rest and sleep. While this is a matter that belongs properly to the home and the mother, the teacher, too, must know how much sleep the child is getting, and insist that his rights in this particular be not overlooked or disregarded.

Let the child himself be an intelligent sharer in all that pertains to his own development. If given reasons for what is required of him as fast as he is able to understand them, it will be an easier matter to enlist his help in the making of a sound body as well as a well trained mind.

The lesson which follows shows one method by which the importance of exercise and rest may be presented to children in primary grades.

(1)

WHY WE NEED EXERCISE

After lessons on the parts of the body that are used in work and play, let one of the children choose an occupation. Suppose the one chosen is that of the carpenter.

Ask the class what a carpenter does. Who has seen him building a house? What tools does he use? What does he do with the hammer? the saw, etc.?

Show some of the most important carpenter's tools, if such can be had. If not, put drawings of them on the board and show how each is used.

Could we build a house if we had all these tools? Why not?

Tell the children that each one of us has something much more important than a house to build, his own body.

When do we begin to build our bodies? What are they made of? What tools do we use?

A very strange thing about our bodies is that every part grows faster and better the more we use it.

It might not be good for a house to move it about while it was being built, but the more we run and play and work with our bodies the stronger and larger they grow.

Why do you think it is that a baby keeps his arms and legs in motion almost all the time when he is awake?

Why is it so much easier for children to run and play than to sit still in school or at home? Why does play make you feel good all over?

You can do a great many things now that you could not do when you were baby's age. What has made your arms and legs and bodies so much stronger and larger than they were then? Who can think of two reasons why every child needs to run and play and exercise every part of his body?

After a short lesson talk of this kind, bring out the same ideas in story form, at the same time showing the picture of Lester reproduced on page 69.

A LITTLE BUILDER

When Lester was a little boy he was always wanting to make something, even before he knew how to handle the tools.

One day the carpenter who lived next door asked him how he would like to be his partner and help him when he grew up.

"I'd like it," said Lester. "Only I'm afraid I won't know how. I haven't made anything yet."

"Well, I hadn't either, when I was your age," said the carpenter.

"How did you learn?" asked Lester, much interested.

"Father showed me. He was a carpenter and let me help him. At first, I only brought the tools he wanted to use. That taught me their names.

"Then he showed me how to drive a nail, and plane a board perfectly smooth, and so on, until I could build a whole house as well as he could.

"You have just as many hands and legs as I have, and the same kind of a body. You don't know quite so well yet how to use it, but you will if you begin to practice now and keep it up till you are a man."

"But I haven't any tools."

"My tools are not the only kind in the world," laughed the carpenter. "Your ball and skates and pencil are pretty good tools for you for a while yet."

"But I can't build houses with them," said Lester in surprise.

"No, but you can do something better still. You can build a good strong body with them, one that will do just what you want it to do. You can easily learn to be a carpenter after you have that kind of a body.

"Come every Saturday and show me how you are getting on with your body building, and I'll make you a little work bench and show you how to use some of my tools."

"All right," said Lester, "I'll build my body now, and when I'm a man I'll be your partner and help you build houses."

POINTS TO REMEMBER

Each one of us has a body house that he is building every day.

Every part of the body house grows faster and stronger if it is used.

Every part of the body grows more skilful and able to do better work by being used.

Every part of the body needs some kind of exercise every day.

(2)

KINDS OF EXERCISE

If the child is to have a well rounded nature, he must early learn that work and study are as

necessary forms of exercise as is play, and that not one of the three can be omitted without bringing about a corresponding lack in his own development.

Children naturally take the mental attitude of grown persons with whom they live. If parents or teachers consider necessary work at home or in the schoolroom as drudgery, it should not be thought strange if the children, too, look at it in the same light, and strive to avoid it when possible.

Use story and illustration to combat this notion where it exists, and to give the children right ideas in the matter.

WORK AS WELL AS PLAY

There were five boys in Roger's home and only one girl, so they all took turns helping mother.

This week it was Roger's turn to set the table and clear away the dishes.

Usually he did it very pleasantly, but when Saturday came and the other boys went skating, he felt rather cross.

"I just hate to work," he told his mother.

"You don't hate to do what will bring you something a great deal better in return, do you?" was mother's answer.

"Perhaps you can not think of anything very good that comes from such work as setting the table, but I can.

"When you grow to be a man you want to be

like father, a man that everybody loves and admires, and that can be depended on to do things.

"If you do, you must begin now to be that kind of a boy.

"Play will give you a strong body, but you need something more than that. You need a well trained body; so you must work as well as play, even if you would rather do something else.

"There is still another kind of exercise that boys and girls need, the kind that will give them a well trained mind as well as a well trained body. Do you know what it is?"

"Do you mean going to school?"

"Yes; if you were a colt you could play all



"Lester was always wanting to make something."

day, and if you were a horse you would not need to know how to do anything but work, but for boys and girls study is just as necessary as work and play."

"I'm glad I'm not a colt if I do have to work," said Roger, "and I'll try to like it better."

"Always remember what work does for you," added mother. "That will make it easier."

LESSON TALK

What kinds of play do you like best? What parts of your body do you use in each of these plays? Why do children need to play?

Why does everybody need to do some kind of work every day? What is your work? What parts of your body do you use when you do it? What else does work do for us besides help to make us strong?

What besides work and play do we need to give us a well trained mind? Why do we need to study every day as well as play and work? What part of us are we exercising when we study?

When is the best time to work? to study? to play?

POINTS TO REMEMBER

We all need different kinds of exercise; play, work, and study.

Play makes our bodies strong and healthy.

Work helps to give us well trained bodies.

Study helps to give us well trained minds.

(3)

WHY WE NEED REST

While exercise is necessary for the growing child, it is equally important for him to have regular sleep in a well ventilated room. This would seem self-evident, but unfortunately those families in which the children are required to go to bed at a suitable hour every night are yet more the exception than the rule.

In some places, curfew laws are keeping the children out of the streets at night, but there is also need of definite instruction as to why children need more sleep than grown people, and as to the proper time for them to go to bed.

If such instruction is given in the school in a way to interest the child, we may be sure the gist of it will be taken home. Thus parents, too, may be reached.

Have the class talk on this subject near the close of the day, or after the children have had some vigorous exercise and begin to feel tired.

Begin by showing them the picture of Esther and Dora, on page 71, and telling the story of these two little girls.

A GOOD NIGHT STORY

When it was too stormy to go out, Esther and Dora had kindergarten at home. They were the teachers, and their pet kittens were the pupils.

That was what they were playing one night when bedtime came.

"Oh, let's put the kittens to bed kindergarten way, and tell them why they have to go. Mayn't we do that first, mother?" begged the children.

"Yes, if it doesn't take too long," said mother with a smile.

"Perhaps we can't remember it all, but the first thing is to have clean hands and face.

"I'm afraid you aren't old enough to wash your own faces yet, kit-cats, so Mrs. Tabby will have to do that for you, while we have our baths."

Mrs. Tabby must have understood, for when Dora and Esther came back, both the kittens were as smooth and shining as possible.

"They are singing their good night songs," said Esther. "Put your ear down close and you can hear them."

"Now say 'good night'," said the children. "Of course, you don't like to stop kindergarten to go to bed, but you have to rest your brain, you know, or else you can't learn fast."

"Why don't you go to bed now, too, mother?" asked the children. "Doesn't your brain get tired now you are grown up?"

"Oh yes," laughed mother. "But a child's brain, as well as his body, has more to do than a grown person's. It has to grow as well as work and play and study. That's why children need more sleep than we do."

"Then that must be the reason why our kittens sleep more than the mother cat," said Dora.

"Come on, Esther. Let's see how much you and I and the kit-cats will grow before tomorrow morning. Perhaps we shall be grown up before we know it."

LESSON TALK

Why does everybody need to sleep? Why do children need more sleep than grown people?

In what other ways can we rest besides going to sleep? Why is it easier to do many different things during the day, than to do one thing all the time?

When do the birds and chickens go to bed? When do you go to bed? How many hours do you sleep?

What is your body doing while you are asleep? Why do you feel fresh and bright in the morning?

Why do we need pure air to breathe at night

just as much as in the daytime? How can we get it? How shall we leave our windows when we go to bed?

POINTS TO REMEMBER

Children need ten or twelve hours of sleep every night.

They need more sleep than grown people, because they have to grow, as well as work, study, and play,

Sleep rests us. It helps to keep us strong and well.

Everybody needs pure air in his sleeping room.

Besides sleep at night, we need to rest during the day. It rests us to change play or work, and do something different.

AUTHORITATIVE QUOTATIONS

NEED OF EXERCISE

No doubt one of the chief causes of nerve fatigue in school children is lack of sufficient fresh air, and especially of bodily exercise in it. In the desire to crowd facts and figures into the receptive brain, the instructors, and behind them the commissioners or committeemen, lose sight of that most important fact, that the building of a beautiful character and a physically strong body is the most essential part of the whole education.

Where overcrowding prevails in the home life, and unhygienic surroundings predispose to conditions of anæmia, the school should all the more endeavor to counteract the evil influences by supplying, as far as possible, the elements of health which are lacking.

Time to breathe a little outside air, time to stretch the muscles, and, above all, time to eat the mid-day meal slowly and to digest it partially before returning to the desk, should be provided.—*Medical Record*.

HEALTH COSTS SOMETHING

Don't expect to have health without effort. Nothing in this world worth anything can be

had without paying for it, and health is the prize of constant struggle.

Nature passes no act without affixing a penalty for its violation. Whenever she is outraged she will have her penalty, although it takes a life.

She shows man the contents of her vast storehouse, and bids him take all he wants, and be welcome. But she will not let him keep for years what he does not use. Use or lose, is her motto. Every atom we do not utilize, this great economist snatches from us. "Whosoever hath, to him shall be given; and whosoever hath not, from him shall be taken even that which he seemeth to have."

If you put your arm in a sling, and do not use it, Nature will remove the muscle almost to the bone, and the arm will become useless, but in exact proportion to your efforts to use it again, she will gradually restore what she took away.

Put your mind in the sling of idleness, or inactivity, and in like manner she will remove your brain even to imbecility. The blacksmith wants one powerful arm, and she gives it to him, but reduces the other. You can, if you will, send all the energy of your life into some one faculty, but all your other faculties will starve, from lack



"Now, say, 'good-night'."

of exercise.—*Success*.

MIND AND BODY DEVELOP TOGETHER

For many months an elaborate series of mental and physical experiments under governmental guidance have been made with some seven thousand of the public school children in Chicago. The result shows, apparently conclusively, that the development of a child's mind is the direct corollary of the development of its body. On the average, the best developed child will be the best child mentally and morally, as well as physically.—*The Beacon*.

Whoever sacrifices health to wisdom has generally sacrificed wisdom too.—*JEAN PAUL*.



Grammar Lessons

FIFTH OR
SIXTH YEAR

THE BLOOD

AMONG the immigrants landed at Ellis Island some months ago was a young Pole. When his turn for inspection came, it was found that he had no money and no friends in this country.

"Don't you know that you can not come in here without friends or money?" he was asked.

But the young fellow was not dismayed. He pointed to the cornet under his arm and said simply, "With this I can go anywhere."

Then he played for the inspectors, and his skill evoked the warmest applause. One after another offered to vouch for him, and he was admitted without further question.

Skill in any department is always in demand. No matter what the trade or profession, the man who has thoroughly mastered all its details and can apply this knowledge "can go anywhere." The way is open.

Health is another "open sesame" to achievement. The youth who finds his determination to succeed backed up by a sound vigorous constitution can overcome every obstacle. He, too, "can go anywhere."

The universal mistake of young people has been said to lie in doing things today that they will regret tomorrow: in learning a business only tolerably well, instead of perfectly; in forming habits that sooner or later lay the foundations of weakness and disease, instead of health.

Bring this thought home to the child through his physiology lessons, especially those connected with the study of nutrition. The two great needs of the body are food and oxygen, and it is the blood that supplies both. If this living stream is kept pure, its ceaseless flow brings life and fresh vigor to every part of the organism. If it becomes contaminated, either deliberately or by accident, it may be as prolific a source of disease.

ITS COMPOSITION

All pupils have seen blood and are familiar

with its general appearance. They know it is red and a little thicker than water.

Borrow a compound microscope, if the school does not own one, and let the class look at a drop of blood through this.

Does it still look red? Why does it look red outside of the microscope?

Let each one tell or write down all that he sees. Send them to their books to verify their observations and learn the names of what they have seen. Then let them look again through the microscope to identify both the red and white corpuscles and the plasma or colorless part of the blood.

How do the red and white corpuscles differ in size? Which are the more numerous?

If you cut your finger it bleeds for awhile and then stops. If a waterpipe springs a leak the water will not stop running until the leak is mended. Why is it that the finger ceases to bleed before the wound heals, instead of continuing to flow as water does?

Bring out by class discussion all the information the pupils can gather on this point from their physiologies and other sources, supplementing this as may be necessary to give a clear idea of the way in which blood thickens when exposed to the air, filling up the cut and stopping the flow.

How does this often protect life? Why does the blood soon form a clot in small wounds, and not when a large artery or vein is cut? Show how it is an advantage to have nearly all the large bloodvessels placed some distance below the surface of the body, and the very small bloodvessels near the surface.

ITS TWOFOLD FUNCTION

To understand the work of the blood the pupil must first have in mind what every part of the body needs. Get the opinions of all on this point, first without and then with the help of their books. How is each of these substances that are needed by the body, oxygen, food, and water to get to every part?

In their study of other topics the class should have traced the course of oxygen from the outside air to the lungs, and that of food and water from the mouth through the organs of digestion. The next step is for them to find how every part of the body gets its share of each.

The arms and legs can not go to the lungs or the digestive organs for anything they need, so it must all be carried to them. What is this carrier?

Illustrate the work of the blood in different ways. For instance, by comparing it to that of an express company that carries packages from one town to another. What does the blood carry? What are the different stations at which

it stops? How often does it make the trip? Does it ever go on a strike?

An express company sends off packages as well as delivers them. What does the blood do that corresponds to such work? What is carried away from all parts of the body by the blood? Where does the blood get rid of these impurities?

The class have already seen under the microscope that the blood is not a single substance as it looks to be, but is made up of several. Each of these parts has its own special work to do. Ask the class to find out what it is.

What do the red corpuscles do? How does the color of the red corpuscles in the veins differ from that of the red corpuscles in the arteries? What causes this difference in color?

Where do the red corpuscles begin to grow darker colored? Where do they begin to grow lighter colored?

What do the white corpuscles do? Compare their work to that of the police whose business it is to keep order in a city and lock up disorderly people.

Show that poisonous germs sometimes get into the body, just as bad people get into a city. When this happens, white corpuscles hurry to the spot and destroy the offenders. They can even go outside the bloodvessels for this purpose.

White blood corpuscles are like physicians, too. When any part of the body is diseased they collect there and try to remove the cause of the disease and make the person well again.

What does the liquid part of the blood have for its special work? This plasma, like the white corpuscles, can pass through the walls of the bloodvessels out into the tissues themselves. In this way the cells and tissues of the body are kept surrounded by plasma. They take in the liquid food the plasma contains just as a sponge soaks up water.

Review again in this connection the different steps in the process by which the plasma, or watery part of the blood, gets the food it carries

to every part of the body. Why is this food in liquid form?

ITS PURITY

Why is it important to have pure blood? What makes pure blood? What causes impure blood?

Give these questions to the pupils for study, the day before taking the same up in class. When ready to discuss the subject, refer to the water system of the nearest city.

How is this guarded from pollution? What might happen if it were allowed to collect dirt and refuse? How much depends upon its being kept free from impurities?

Point out the likeness between such a system and the blood supply of the body. The health of a person depends on pure blood just as the

well being of a city depends on its having pure water.

Impurities do not fall into the blood as they might into a city reservoir. They are carried into it, either with the air we breathe or along with the food we eat. In this way it is easier to guard against them than to protect a water supply. How can one do this?



"God loves his mountains; on the height
The day dawns first."

What kind of air must one breathe to give him pure blood? When do we need to breathe pure air? How can we tell when the air in any room is fit to breathe?

What kind of food must one eat to make pure blood? Name such foods. Why will not very rich food make good rich blood?

How do we know that alcoholic drinks and tobacco are not foods? What kind of blood will such things make?

If one of us had the chance to build a house for himself, and could choose his own materials, he would be likely to select the very best he could get. He would take care that not a single poor or imperfect stick or stone went into it. It should be as nearly perfect as possible.

Perhaps none of us will ever have such an opportunity as that, but we all do have the privilege of building our own bodies, and here, too, we can select the material.

AUTHORITATIVE QUOTATIONS

THE POISON-RESISTING PROPERTY OF THE BLOOD

Physiology tells us that tissue-building, repair, and health, depend on the proper glandular activity, and that the poison resisting property of the human body exists in the blood. It is now well established that the element of the blood which possesses this property is the leucocyte, and that if the leucocytes are of sufficient number and possess their normal vitality and strength, the pathologic or toxic condition will be overcome and health restored.—I N. LOVE, M. D., Ex-Pres. Mississippi Valley Medical Association.

OXYGEN THE LIFE-GIVING ELEMENT IN THE BLOOD

Oxygen is the life-giving and restoring element in the blood, and is also active in its property of destroying those germs which threaten to counteract its healthful influence; in other words, is a most valuable germicide.—*Dietetic and Hygienic Gazette*.

WHITE CORPUSCLES AS SCAVENGERS

While bacteriologists are not fully agreed as to the precise manner, or the agencies by which the blood carries on the warfare against disease-producing bacteria, the weight of evidence favors the theory that the white corpuscles are common defenders and scavengers; but all must agree that with a pure condition of the blood and a perfect circulation, its bactericidal power will be at its highest activity, and that this form of immunity is of all others the most desirable.—CHAS. H. SHEPARD, M. D., Brooklyn, N. Y.

ACTION OF ALCOHOL ON RED BLOOD CORPUSCLES

When I was Superintendent of the Laboratory of the Royal College of Physicians in Edinburgh, I had the opportunity of observing a number of experiments carried out by Dr. D. W. Aitken in which he showed that alcohol has a special affinity for the colouring matter of the red blood corpuscles. The red blood corpuscles in fact are hampered in two functions. They absorb less—and that which they do absorb is less available, so they can not carry on their useful work properly and the normal tissue changes usually carried on in the body are interfered with.—G. SIMS WOODHEAD, M. A., M. D., University of Cambridge, England, in *Medical Temperance Review*.

ACTIVITY OF THE LEUCOCYTES OF THE BLOOD

CHECKED BY ALCOHOL

Alcohol acts on the leucocytes of the blood, checking their activity and destroying their function. These are driven in masses by the increasing rapidity of the heart, and become

blocked in the capillaries, forming centers of obstruction and injury.—T. D. CROTHERS, M. D., in *Journal American Medical Association*.

ALCOHOL INJURES ALBUMINOUS CONSTITUENTS OF THE BLOOD

Alcohol does not remain in the stomach; it traverses the mucous membrane as the walls of a porous vase, and thus reaches the blood. It is here, above all, that its injurious action appears. This liquid serves as a vehicle to the albumen which ought to nourish all the viscera, and which is dissolved by the process of digestion. Alcohol diminishes its solubility, and thus renders it unfit properly to fulfil its function.—DR. BIENFAIT of Liege in *Medical Pioneer*.

ALCOHOL CAUSES ACCUMULATION OF WASTE PRODUCTS IN THE BLOOD

Alcohol disturbs the circulation, leading to a loss of body temperature and an accumulation of waste products in the blood, accompanied by depression and muscular weakness.—W. A. CHAPPLE, M. R. C. S., in Dunedin. New Zealand, *Address*.

"Courage is a matter of the red corpuscles. It is oxygen that makes every attack, and without oxygen in his blood to back him, a man attacks nothing."

EDELWEISS

God loves his mountains; on the height
The day dawns first,
When from the ebon cave of night
The sunbeams burst.
And there in amethyst and gold
The dying lights
Fall softly when the day is old;
God loves his heights.

Last touch of beauty, there he set
His edelweiss,
To gem some mountain minaret
Of snow and ice.
So near the stars those rugged crests
Have dared to rise.
Perchance the blossoms on their breasts
Fell from the skies.

Though life be often bare and bleak
With sacrifice,
God grant to us, as to the peak,
His edelweiss;
Some starry blossom in the snow
That chills us here,
By whose white token we may know
His skies are near!

—OLA MOORE in *Christian Work*.

School Physiology Journal

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HENRIETTA AMELIA MIRICK, Assistant Editor

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Always a night from old to new!
Night and the healing balm of sleep!
Each morn is New Year's morn come true,
Morn of a festival to keep.

Only a night from old to new;
Only a sleep from night to morn.
The new is but the old come true;
Each sunrise sees a new year born.

—H. H.

A NEW ATTACK ON SCIENTIFIC TEMPERANCE TEACHING

WE publish elsewhere, says Dr. A. E. Winship editorially in the *Journal of Education* of December 31, 1903, an article on the report of Dr. Bowditch and Professor Hodge on temperance teaching in the schools. We do this for three reasons: first, because our readers are entitled to it; second, because we wish to remark upon it; and third, because it was telegraphed from Boston to the *Ottawa Sun* of Canada.

This report should be fearlessly and carefully read by all friends of temperance. This is a fresh attempt to do what the same class of enemies of the school law have failed to do time and again. A few facts must be clearly kept in mind:

First. That Dr. Bowditch and Professor Hodge are honest men, and are incapable of being, directly or indirectly, influenced by the liquor interests.

Second. That they are just as definitely cranks as are Mrs. Hunt and Dr. Plumb. All or none are cranks.

Third. That their attitude and zeal cause great rejoicing to the liquor interests.

Fourth. That they did not telegraph that article to the *Ottawa Sun*; that it was not telegraphed by any newspaper or association as "news," but must have been sent forth by interested and delighted parties.

Fifth. That Professor Hodge's own "*Nature*

Study" book, one of the best ever issued, would be as mercilessly ridiculed and denounced as the physiologies if it was worth anybody's while to turn loose upon it the university scientists.

Sixth. That no elementary text-book in history or geography could stand the test of getting the unequivocal indorsement of more than 41 per cent of one-fourth of the teachers taken at random.

Seventh. That there is nothing charged against the physiologies that is so unscientific as Dr. Bowditch's unscientific, undignified, unprofessional assumption that there is any scientific value to his "28 per cent," "72 per cent," "41 per cent," of results from answers from only one-fourth of those who should have answered. Any college freshman after three months in economics would make Messrs. Bowditch and Hodge weary if he analyzed their unscientific pretensions to having collected data.

Eighth. That intemperance is a crying evil; that the habit of using intoxicants wrecks the health, the intellect, the morals of millions of Americans; that the use of intoxicants tends to undo all the schools aim to do; that their use is a curse to the home, to industries, to municipal and political life.

Ninth. That it is vastly better, in such a cause, to do a little too much than to do nothing.

Tenth. That the only manly, professional, scientific method of rectifying any errors in the existing physiologies is for men like Dr. Bowditch and Professor Hodge to make a scientific school physiology that will satisfy allopaths, homeopaths, osteopaths, Christian Scientists, *et al*, get the sanction of all medical authorities of all lands, submit it to a vote of a miscellaneous fourth of all teachers and get the indorsement of more than 41 per cent, and then go before the school boards and get it adopted. This is their duty as well as privilege.

Eleventh. That no eminent medical authority has ever made any appreciable effort to utilize the schools for the enlightening of youth regarding the dangers lurking in intoxicants.

Twelfth. That the Woman's Christian Temperance Union has put a million times the effort into the enlightenment of youth on these subjects that has been put forth by all their critics combined.

Thirteenth. That the *Ottawa Sun*, in the editorial that apologizes for printing the telegraphic report, puts the case none too vigorously when it says: "When one sees the number who are risking reputation, employment, and causing deep anxiety to those about them by their dissipation, he can not but feel that those who urge the unquestionably safe course of total abstinence deserve nothing but encouragement."

THE IMMIGRATION PERIL

WHEN Moses, the great lawgiver, had been tried to the deepest depths by the people he was trying to lead out of slavery, we are told he uttered the following prayer to God:

"Now, therefore, I pray thee, if I have found grace in thy sight show me now thy way, that I may know thee, and consider that this nation is thy people."

In the language of today, Moses was asking for help to understand his times and its people, and whether God had really called him to be their leader.

No wonder he wanted to be assured of his call to lead a people who, as soon as his back was turned, with indecent worship had said of a golden calf,

"These are thy gods, O Israel, which brought thee up out of the land of Egypt."

There was never a time when we in this country needed more to utter the prayer of Moses, "Show me now thy way," in other words, to ask for help to understand our times and its people, and for guidance to act wisely.

It is said that at the first New England town meeting our fathers prefaced their resolutions with the preamble,

"Whereas the earth is the Lord's, and whereas we are the Lord's people, Resolved."

Their posterity has never doubted that this is God's country and that the descendants of the original settlers are *the* people of a land destined to be the haven for the oppressed of all nations, but they are beginning to ask if there is not danger of the tables being turned and of their being oppressed by the vast hosts who are coming every year from the old world to share in the blessings of this country and to help govern them. Will these hosts help us to keep this God's country? Nearly one million immigrants came to our shores during the last twelve months, enough to settle a city almost as populous as Philadelphia. This immigration is assuming the proportions of an invasion.

Hon. Whitelaw Reid, in his recent New York speech commemorating the landing of the Pilgrims, tells us that our total immigration for 1903 was over one hundred thousand greater than for any other year ever recorded in our history, and that more than two-thirds of all the steerage immigrants this year, instead of coming as formerly from the lands of our ancestors and their kinsfolk, England, Scotland, Ireland, Wales, Germany, Denmark, and Switzerland, have come from the three countries, Italy, Austria-Hungary, and Russia, and that among the other third are many Asiatics. He asks whether, instead of our rapidly assimilating and

Americanizing these peoples, as we have smaller numbers of other types in the past, there is not danger now that "this incongruous, heterogeneous mass," knowing nothing of our institutions, will outnumber and assimilate us.

Mr. Reid reminds us that "the Puritan conquered this land from the Indians. His sons conquered it from the French and Dutch. His grandsons conquered it from the English. His great-grandsons conquered it from slavery," and asks "Can their descendants conquer it from itself," or from its present perils? In other words, can that capacity for self-government which is essential to American citizenship be developed in every race or class of peoples that comes to our shores? Is there no limitation to the recoverableness of human nature of every kind if it only gets to our land and lives under our stars and stripes?

The capacity of man for self-government is the fundamental principle on which our government by the people rests. If the day ever dawns in the United States when a majority of its people are not capable of self-government, there would then be no more stability to what we rejoicingly call our free institutions than there is to the so-called republics where a revolution is the expected sequence of a popular election.

Last summer, while traveling on the continent of Europe, I saw large crowds of these immigrants being hustled into the lowest class of railroad cars by those who were seemingly steamship agents, as they were being pushed from the east to the seaports to embark for the United States. The personal baggage of each, if he or she had any, apparently consisted of a small bundle, and these were piled on hand-carts that the most stalwart of the men or women pushed as the crowds were steered across the city to change stations. "Those people think that in going to the United States they are going to heaven," said our vice-consul in Leipsic, Germany, of a crowd of such emigrants who were passing through that city.

Will they and their like who are flocking to our country help us to keep it God's country? was the question I was mentally asking as I searched the faces of those emigrants for indications of capacity for self-government.

Full well I knew that they thought they were starting for the land of plenty, and that they had brought from the countries they had left the idea that plenty means, among other things, all the beer, wine and cider and other alcoholic liquors they can drink. With dread, as I studied those men and women, I recalled the fact that it is the nature of the alcohol in such drinks to destroy in the drinker that principle vital to our national existence,

capacity for self-government. The children of these peoples I knew would soon be in our public schools.

With the joy every patriot feels on seeing a danger averted from the land he loves, I recalled the victories that had crowned the unreportable stress and strain of twenty years' effort to secure scientific temperance instruction for every child in all the public schools of the United States. Hence I knew the nation had legally provided that instruction concerning alcoholic drinks should reach all these children, to be carried home by them to their parents.

As I looked into the faces of those Polish, Russian, Bulgarian, and Magyar children of the east, I realized afresh the task of the teachers in our land before whom in a few days these children would appear to receive their first lessons in the ways of the new country to which they had come.

Deeply grateful for the good work teachers are doing who take these fledglings as soon as they leave the ship, I realized anew the impossibility of the most skilful teacher giving these children their first lessons in the care of their bodies and the reasons for total abstinence from alcohol and other narcotics

from such text-books as Overton's which begins the most primary lessons with microscopic anatomy; that of the cells, a phase of the subject altogether beyond the comprehension of any pupil in the earliest stage of school life, and especially so for these children of unlettered races. One might as well teach them trigonometry as their first lesson in mathematics.

Only a minority of all the children remain in our public schools beyond the lower grades. Hence, if the schools are to teach the majority of the future citizens of this republic abstinence from the drinks whose nature it is to destroy capacity for self-government, all they can comprehend about it must be taught them in the lower grades. The selection of books too difficult and too hard for these grades is one method of preventing the successful study of this subject

in those classes where a majority of our future voters are now being trained. This method we must prevent if we would save these millions who are coming to us from becoming victims of the saloon and therefore so many millstones hanged about our necks to drag us down to the fate of alcoholized nations.

History shows that, given the conditions, human beings, whether they be Jew or Gentile, bond or free, male or female, are recoverable to standards that are essential to true liberty. Are not these conditions, the ideals of the Nazarite, embodied in the Christian church, and the free school with its universal compulsory education concerning liberty's greatest enemy, alcohol and other narcotics? These conditions

prevail to a greater extent in our own country than elsewhere. Let us so guard and push them that all who come to our shores shall feel their influence.

MARY H. HUNT.

THE NEW YEAR A PEACEMAKER

I have made peace
with my foes,
peace with the
lost and the
slain;
Hope and the Future
are mine;
over the living
I reign.

For I have buried
the old, buried
and put away,

And the whisper and curse of wrong I suffer to
fail, today.

And the sorrow of dark regret, and the dread of
the vampire past,
Are dead on the white highways where the Old
Year breathed his last.

I am the glad New Year. Songs of the morn I
sing;
Songs of the triumph-soul, with the pardon and
peace I bring.

—FRANK WALCOTT HUTT.



"What miracle of weird transforming
is this wild work of frost and light,
This glimpse of glory infinite?"

"Physical education consists not alone in looking after the health of children, but in training them in intelligent care of the body."

TEMPERANCE EDUCATION IN THE MIDDLE STATES

NO REACTION AGAINST IT AMONG THE TEACHERS

LAST spring, while studying the immigration question in the lands emigrated from, news came that the Committee of Fifty in the United States had published their long heralded *Report on the Physiological Aspects of the Liquor Problem*, in two volumes of eight hundred pages, in which they oppose the study of the laws of health, including those that teach the nature and effects of alcoholic drinks and other narcotics, in the lower grades, and advocate teaching the exploded idea that alcohol is a food because it is oxidized in the body, and oppose teaching that it is a poison.

Then I said that I must go home to America and again go to the people and the teachers to whom the people entrust this education of their children, and see for myself if there is any truth in the claim that there is a "reaction against this study" without which our nation is doomed. Thus my itinerary of public addresses, chiefly to teachers, began last October and continued up to Christmas time in six different states.

The first address was given in Vermont, at the State Woman's Christian Union Convention, the state in which, in 1888, the first backward step was taken, unconsciously to the temperance people, by somebody's omitting from the codified laws of that state the strong law of 1886 which required a systematic graded course of study in temperance physiology for all pupils in all public schools, leaving only a weak, ineffective statute in its place that was complied with if the few pupils in the high school pursued the study.

The boy in the Vermont schools, who at that time, 1888, was six years old, was a voter fifteen years later, in 1903, when the Vermont prohibitory law of fifty years standing was up again for popular approval. The voters of half a century ago were not there to cast again their ballots against the saloon. The young voter was, but, he knew nothing of the agitation that, before his time, shut out the legalized saloon from his state, and he had been cheated out of an education that might have convinced him that alcohol is an outlaw. Thus Vermont by the vote of her own sons became a license instead of a prohibition state.

No better testimony could be presented to prove that what we fail to sow of temperance truth through the pursuit of this study by all pupils in all schools we also fail to reap in prohibition sentiment. Law is embodied sentiment. Prohibition is sentiment against alcohol which must first be drilled into the convictions and habits of the people before it manifests itself at

the ballot box. A majority of the voters, home born as well as foreign born, must be convinced that alcohol is by nature an outlaw before they are ready to outlaw it from their habits and traffics.

From Vermont I turned south, looking after that possible ghost of reaction against the study of temperance physiology. The spirit in which the addresses to teachers' institutes in Pennsylvania were received was evidence that there is no "reaction" among the many thousand teachers in the ten Pennsylvania counties, into whose faces I looked and with whom I discussed the facts in this science to be taught all pupils in all schools; how best to teach these facts; and the vital importance of all our people knowing that alcohol destroys that capacity for self-government upon which our free institutions rest.

Although engagements for Pennsylvania institutes were nearly all made directly with the school officials of the counties, I always met our local Woman's Christian Temperance Union members who confirmed what I gathered from the teachers about the results of this study.

Pennsylvania has had a very good law in force since 1885, nineteen years. Everywhere I asked of the interested teacher and of the Woman's Christian Temperance Union members two questions; first what text-books on temperance physiology have been in use in your schools during these nineteen years? second, as you look back, what results do you see from this study?

Where there existed the combination of the faithful teacher and the latest indorsed books, the result reported was a steady growth of temperance sentiment in the community, fewer saloons, less cider made or drunk, less drinking or smoking than formerly. I never heard of such results in a community where the old, badly graded Smith books have been used, books that teach that "men sometimes use alcohol through a long life without seeming to be harmed by it," and that "tobacco gives a freer flow of ideas."

Said an experienced teacher, "It is hard to awaken enthusiasm for total abstinence from alcoholic drinks, beer, wine, or cider, the form of alcohol by which the children are tempted, and from tobacco, when the text-books contradict what we teach, or when, like the Overton physiologies, all the books of the series begin with cells, a topic too difficult for the child's comprehension and which thus arouses his prejudice against the whole study of physiology and hygiene

"You see", the teacher added, "good books adapted to grade in physiology are more neces-

sary because we have neither had the training in this study we have had in other branches nor do we get much help from those above us in the teaching profession, because they do not understand the subject much better than we do. This is the first time this subject has been presented at an institute in this county for years."

For more than twenty years the writer has insisted that the salvation of this country from the drink curse depends upon the dissemination through the schools of the truths of science concerning alcohol, put in language the children can understand. Such dissemination demands good, well graded text-books that contain these truths for the use of pupils who use books in other studies. Everything in the shape of persecution, except personal violence, has been meted out for this insistence upon good books, but the results more than pay for the stings of the persecutors.

If there is "reaction" in Pennsylvania it was hidden in the glow of pleasure on the faces of the teachers over the story of the great results to our country of their work in this branch, and in the enthusiastic desire for help to do better work on the part of the men and women teachers whom I met.

Last October, having examined the Report of the Committee of Fifty and finding in it nothing against scientific temperance instruction but unreasoning prejudice, and having examined also the facts as to the study and its results in this country, I ventured to say that the child is born who will see the last legalized saloon and brewery go from our country if the temperance people now do their part in looking after the enforcement of their temperance education laws. How old that child, born last October, will be when so large a majority of the people of Pennsylvania are personal prohibitors that the liquor interests will look for better investments, depends on whether the temperance people of that state as promptly as possible put out of the schools such books as the Overton physiologies, written to meet the supposed reaction against temperance physiology that for reasons best known to themselves a few are trying to create.

Let nobody say I am placing undue emphasis on the text-book. The school should furnish to the child three sources of information; the good teacher, the good book, and observation or experiment; the lack of any of these three sources, especially good books and helps for teachers, will delay results that might otherwise be on time.

The one hearing I had before teachers in Ohio, left with me appreciation for their courtesy and evident interest in the subject. The

friends of temperance in Washington, D. C., need to lose no time in preventing the adoption of the Overton or reactionary physiologies for the schools of our national capitol. Maryland now seems to be the storm center in this struggle for and against the Overton books. Fortunately, representative temperance people of Maryland after examining those books have pronounced them "impossible" and are watching for further developments.

Ten nights before citizens' audiences in different towns and cities in New Jersey showed the people keenly interested. "There is no reaction in this state against scientific temperance instruction" said school superintendents whom I met. One man in position to know said, "The effort to create such reaction in this state has fallen flat." But in New Jersey, as everywhere, the local Woman's Christian Temperance Unions need to find out immediately what text-books on physiology are in use in the schools. If the best are not there they should help to get the best as quickly as possible, the *Oral Lesson Book* for primary teachers, as well as the latest and best books to be put into the hands of pupils who have books in other subjects. Everywhere in this itinerary in six states, the department course of study which shows just what topics should be taught in each grade was received with enthusiasm.

Every new movement like this for scientific temperance instruction has to pass through the fire of criticism. First from those who oppose any thing proposed today which did not exist yesterday. Second, from persons who from reasons of their own are opposers. These two classes are the natural obstacles that progress always has to meet and that it must sweep past. A third class of critics are those who misunderstand the movement, and then proceed to attack their own misconceptions as though these were the real thing. Honest critics of this sort when shown their mistakes become intelligent friends. I am convinced that hosts of such men in the teaching ranks need only to hear the facts to be won. The written word goes for much, but when supplemented by the testimony of the living voice it tells for more. Hence, for the next year every hour I can be spared from my desk, to which calls are coming from all the earth, will be given to teachers' institutes in the different states of our country. The times demand our utmost.

MARY H. HUNT.

"Goodby, Old Year! Tried, trusty friend, thy tale, at last, is told.
O New Year, write thou thine for us in lines of brightest gold."

SALARIES OF TEACHERS

WORK PLANNED BY A COMMITTEE OF THE NATIONAL
EDUCATIONAL ASSOCIATION

AT the July meeting of the National Educational Association in Boston, the teachers of New York City petitioned the executive council to investigate and report upon the salary, tenure and pension systems of teachers.

This committee is making tables of all the salaries paid to men and women in every grade from kindergarten to superintendency in all American cities of 8,000 inhabitants and upward, in typical communities of less than 8,000 in every state, and a similar statement for twenty-five rural schools in every state.

To accompany these tables the committee desires to furnish schedules of the purchasing power of money in typical localities, so that the taxpayers, for instance, in Great Falls, Montana, where living is high, may make an intelligent comparison of their teachers' wages with those of Ypsilanti, Mich., where food, clothing and rents are cheaper. In the past ten years living expenses have gone up from 30 to 50 per cent. The salaries of teachers have gone up about 6 per cent, so that our teachers are actually working at from 24 to 40 per cent less money than heretofore. The claim is made that public school education can not hold its own with civilization, unless the teacher, who is the real educational factor, is enabled to keep herself in a condition to render good service.—*Brooklyn Daily Eagle*.

ECONOMIC ASPECTS OF THE
TEMPERANCE QUESTION

The economic aspects involved in the treatment of the temperance question are having an influence which is spreading everywhere, and which is comprehended in industrial establishments and by government. The simple idea that a man with a clear brain is a better employe than one with a muddled brain is carrying the question forward to success, and the sooner men learn that in order to secure employment at all they must approach their service with minds unclouded, the better for humanity. Religion teaches that the temple of God must not be defiled. Economic consideration now allies itself with religion, and insists that the welfare of the community demands that the temple of God shall remain undefiled.—CARROLL D. WRIGHT.

"The keenest critic of him who can is he who can't."

A LITTLE STRANGER

One day, I met outside the town,
A little boy a-sneezing,
His white wool coat was trimmed with down,
The weather it was freezing.

He wore a fur cap o'er his ears,
As white as your pet kitten's,
Leggings of fur, and, listen, dears,
Two tiny furry mittens.

He had the bluest, brightest eyes,
And crinkly curls all shiny,
Two dimples of the largest size,
A mouth so red and tiny.

White snowflakes glistened like wee pearls
Upon his pink cheeks glowing,
And clung in clusters to his curls,
Which breezes bold were blowing.

Said I, "Where go you, this cold morn?
Wait, you shall have a nickle!"
He blew a loud blast on his horn,—
It was a long icicle.

His smile was like the sunshine clear,
His voice was sweet, O, very!
I bring the world a bright New Year,
My name is—JANUARY!"

—Primary Education.

TEMPERANCE TEACHING IN ENGLAND

At the annual conference of the North of England Temperance League held in Carlisle, Sept. 28, the following resolution was introduced and unanimously adopted:

This Conference urges upon the Government, upon members of Parliament, and upon all education authorities the necessity of giving to all children in the elementary schools, as a part of the ordinary school curriculum, regular scientific teaching of physiology and hygiene, which shall include special instruction as to the nature and effects of alcohol.—*The Alliance News*.

PHYSIOLOGY TOPICS FOR FEBRUARY

PRIMARY—Parts of the Body used in moving about; Legs, Feet, Toes. How we find out Things; Sense of Sight.

INTERMEDIATE—Care of the Teeth. Work of the Stomach. Skin and Cleanliness. The Heart. Body Heat.

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Anatomy, Physiology and Hygiene For High Schools. By Henry F. Hewes, M. D., Instructor in Physiological and Clinical Chemistry, Harvard University Medical School.
Price, \$1.00

With experimental work this book gives a connected outline of the processes which accomplish the maintenance of life in the body and of the rules of hygiene which it is necessary to follow in order to facilitate their harmonious action. Chapters are included upon the nature and action of bacteria in connection with infectious diseases, and also upon physical culture and gymnasium exercises.

Elementary Anatomy, Physiology and Hygiene For Higher Grammar Grades. By Winfield S. Hall Ph.D., M.D., Professor of Physiology, Northwestern University Medical School,
Price, 75 cents

Treated according to the inductive method, beginning with the easily observed facts of plant physiology and leading by comparison up to human physiology and hygiene. Simple illustrations and experiments, but no dissections, are presented in connection with the physiological facts. A particular feature of the book is the lessons on domestic economy which form a noteworthy contribution to one of the most important problems of sociology.

Intermediate Physiology and Hygiene For Fifth and Sixth Year Pupils, or corresponding classes in ungraded schools. By Winfield S. Hall, Ph.D., M. D., and Jeannette Winter Hall, Special Teacher of Physiology, Berwyn, Ill.
Price, 40 cents

The illustrations are a marked feature of this book, including both mechanical diagrams and attractive pictures designed to interest the pupil. Special attention is called to the simple comparisons of the bodies of human beings and of the lower animals. The object of this comparative study is to impress upon the mind of the pupil the unity of nature and to cultivate in him a love and sympathy for the lower animals.

New Century Primer of Hygiene First Book for Pupils' Use. By Jeannette Winter Hall.
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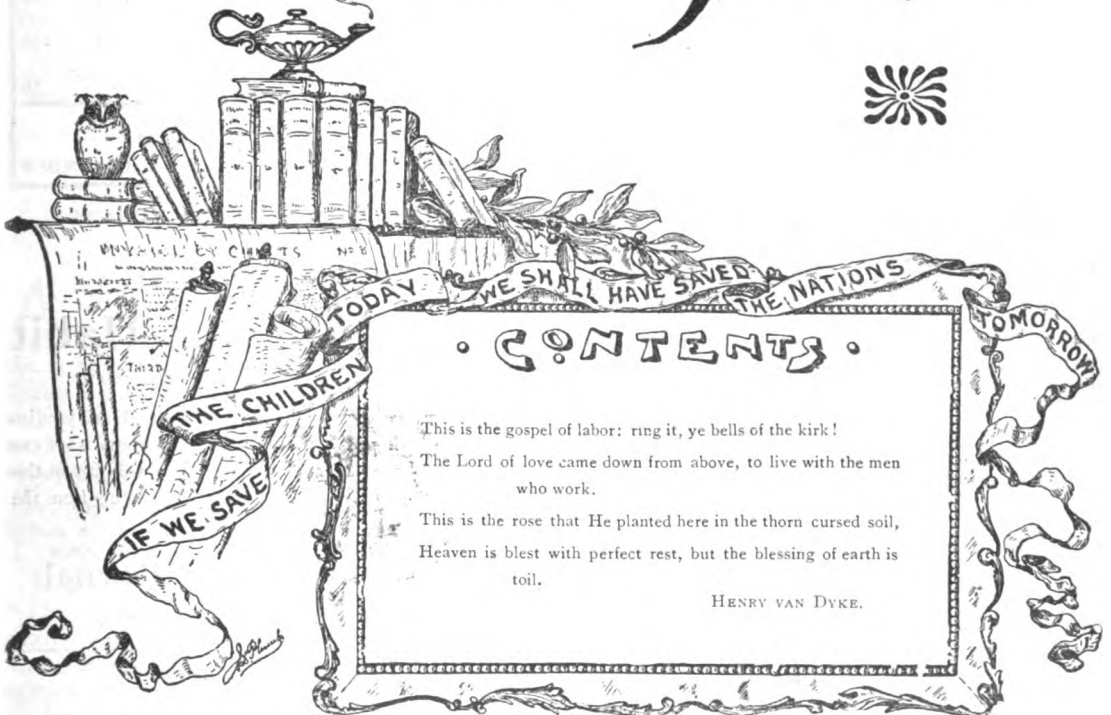
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No. 6

THE BETTER WAY

WHO serves his country best?
Not he who for a brief and stormy
space
Leads forth her armies to the fierce affray;
Short is the time of turmoil and unrest,
Long years of peace succeed it and replace;
There is a better way.

Who serves his country best?
Not he who guides her senate in debate,
And makes the laws which are her prop and stay;
Not he who wears the poet's purple vest,
And sings her songs of love and grief and fate;
There is a better way.

He serves his country best
Who joins the tide that lifts her nobly on;
For such has myriad tongues for every day,
And song but one; and law within the breast
Is stronger than the graven law on stone;
This is the better way.

He serves his country best
Who lives pure life, and doeth righteous deeds,
And walks straight paths, however others stray,
And leaves his sons, as uttermost bequest,
A stainless record which all men may read;
This is the better way.

—SUSAN COOLIDGE

THE DUTY OF THE STATE TO THE CHILDREN

A FEW months ago, as I went to England from the profound discussions of the Bremen Anti-Alcohol Congress, and from the sympathetic interest and eager inquiry, in Berlin and other cities in Germany, Switzerland, and even France, as to the scientific educational method for the prevention of intemperance, I recalled the words of Lowell:

"At the birth of each new era, with a recognizing start,
Nation wildly looks at nation standing with mute lips
apart."

Is a new era now dawning? He who said "The truth shall make you free" has been guiding the researches of great men of science, who, loving truth for truth's sake and for its agency in saving the people, have swept away the beguiling mask from alcohol, revealing the false hideousness with which it has deceived and destroyed. In every age of the world the discovery of truth essential to human uplifting

has ushered in a new era. The attitude of the world toward alcohol can never be again what it was before the discoveries of modern science showed it to be a poison to human well-being. The truth is out. Its universal dissemination is now the question.

NEED OF TEMPERANCE EDUCATION IN ENGLAND

The fact that there are 72,000 barmaids in England, and that drinking there is increasing among women, while the sellers of the drink are demanding compensation if licenses to sell are refused them, is leading earnest souls in all ranks of British society to discuss the necessity of compulsory scientific temperance instruction by act of Parliament for the United Kingdom.

An article in the *London Times*, of January second, calls attention to the fact that legislation against drink in England is ahead of education, which it says is unfair. It calls attention to the fact that in the United States there are 22,000,000 children of school age under temperance education laws, and that such laws apply to all children in the public schools of the nation, while in the United Kingdom, through the voluntary agency of the Band of Hope, occasional lessons on temperance are given to but one pupil in thirteen in the elementary schools. The article closes with an appeal to patriots for help in getting definite instruction on this subject for all the children of Great Britain.

In Torquay, England, an effort is being made to secure the introduction of this study through the action of the local Board of Education.

A copy is sent me of the debate in the town council reported in the *Times*, of December 4th, over the proposition to introduce this study into the curriculum of the elementary schools of Torquay, England. As in America we have had to meet all the objections that are incident to the initial introduction of this study as they appeared in the above debate, possibly a chapter from our experience may not be uninteresting here.

ALCOHOL A BAR TO PROGRESS

The opening of the twentieth century finds the alcoholic and other narcotic habits of the civilizing races among the greatest hindrances to human progress. A close study of these habits shows that they are usually begun in ignorance of the power of alcoholic drinks, when taken even in moderate quantities, to create the uncontrollable and destructive desire for more. The antidote for the consequences of this uni-

versal ignorance is prevention through the warning instruction contained in the scientific facts in the case. To be effective, such education must be as universal as the people and must begin before the use of alcohol has become a habit. As the public school reaches the largest numbers, beginning with the early years of childhood, it is manifestly the medium for conveying this instruction.

If we take alcohol away we must give the people something in its place. That something must be healthy tissues that do not cry out for alcoholic beverages or other narcotics to meet an abnormal craving. Such tissues are the result of obedience to the laws of health. In order that the people may obey these laws, they must be taught what they are, together with physiology enough to make them intelligible. In the same connection, that is, as a part of general hygiene, they must learn from the testimony of modern science why they should not take any form of alcohol as a beverage, or other narcotics.

The prevention of wrong physical habits and the intelligent formation of right habits is the object of this study, hence, it must begin with the primary classes and progress through the grades or standards, with yearly additions of new matter adapted to the progressive comprehension of pupils, until the subject has been completed in the first year of the high school. Thus this guiding instruction will keep pace with the most susceptible, habit-forming period of childhood and youth.

The foregoing is the underlying philosophy of the movement that has put a law upon the statute books of the national Congress for schools under Federal control, and of the forty-five states of the United States of America for all other public schools, requiring that the pupils in all such schools shall be taught and shall study physiology and hygiene, including special instruction as to the nature and effects of alcoholic drinks and other narcotics upon the human system.

OBJECTIONS TO THE STUDY ANSWERED

The twenty years from the time our first petition for compulsory scientific temperance instruction was presented to a legislature to the passage of the last law which put all the children in the public schools of the entire country under this legislation was a period of continued agitation and appeal to public opinion from the platform and through the press.

Hearings were given to the millions of petitioners for these laws by the committees on education in the legislatures of our national Congress and of our forty-five states. There we heard every phase of objection and to each we were given an opportunity to reply.

THE OBJECTION THAT THE STUDY IS TOO DIFFICULT

At the very outset, when we were urging the introduction of this study for all grades of all public schools, we were met with the objection, "Physiology and hygiene is too difficult a subject for primary or elementary pupils."

That very objection was an evidence of the need of the people's knowing that there are simple laws of health that the youngest pupil can understand, should know, and obey; for instance, those concerning cleanliness, ventilation, healthful dress, what to eat, what to drink, and what not to eat and not to drink. A few truths about these and other hygienic subjects can be taught primary pupils, with story and illustration to fix facts that will both guide and abide with these little ones as a foundation for further progressive study of the same subject.

Nineteen years ago, when a bill providing for the study of physiology and hygiene, including special instruction as to the effects of alcoholic drinks and other narcotics upon the human system, was pending before the legislature of one of our states, a senator, whom we shall call Senator Marden, in replying to a member who made the above objection, said:

"The Senator says this subject is too hard for little children. Has he forgotten the glee with which his babies, before they could speak, pointed their chubby fingers to eyes, nose, and mouth when he asked, 'Where are baby's eyes? Where is baby's nose? Where is baby's mouth?'"

"He was then teaching a first lesson in physiology. Later when the Senator said, 'Baby must not eat this or that; it will make baby sick,' he was teaching a primary lesson in hygiene."

"To such simple lessons which the child receives from its parents we propose," said Senator Marden, "that the schools shall add from year to year such progressive instruction as to how to take care of the human body, in which every one must live as long as he stays in this world, as will secure its highest efficiency. This state wants the strong, achieving men and women which a sound hygienic education of all children will secure."

"The gentleman appears to be afraid of the words physiology and hygiene. He seems to think it means an abstruse and difficult subject. If mathematics had never been taught in primary and elementary schools, the man who thinks of that science only as geometry and trigonometry would protest that it is too hard for primary classes. But we who began, when we first went to school, our study of mathematics with the simplest facts in numbers know he would be as mistaken as the Senator who seems to think that physiology and hygiene is too hard for any but medical students."

"The great mass of children leave school be-

fore reaching the upper grades. They will never get this study at all if it is required only in advanced classes. And there it would find many pupils who have already formed smoking and perhaps drinking habits which earlier lessons might have prevented. In the case of such pupils the less hopeful work of reformation rather than prevention faces the teacher."

THE OBJECTION OF LACK OF TIME

A frequent objection was, "The curriculum is overcrowded now. There is no time for another study."

To this we replied, "The highest interests of the children and of the state soon to be governed by them calls for such a rearrangement of the curriculum as will make both time and place for this important branch. If there is a little less time given to something else of less importance there will be time for this study."

It is more important that the future men and women of the nation should have the sound physique resulting from early hygienic education that teaches with other laws of health the dangerous character and disastrous effects of alcoholic drinks and other nar-

cotics than that they should be able to name every river in China. Furthermore, it is a very modest amount of time that the proposed course of study in this topic asks for. At most, four lessons per week for ten weeks of each year, beginning with the first primary and extending through the first year in the high school, are all that is asked. This amount of study will cover the subject if it is properly graded, making in all but 360 lessons in the whole subject, about one-fifth of it temperance matter, extending through nine years. From 600 to 900 lessons in geography are given in the same time.

THE OBJECTION THAT TEACHERS ARE UNQUALIFIED

Then some member of these committees would bring forward the objection, "The teachers are not qualified to teach the science of this

new subject. How can they make anything but a jumble out of it?"

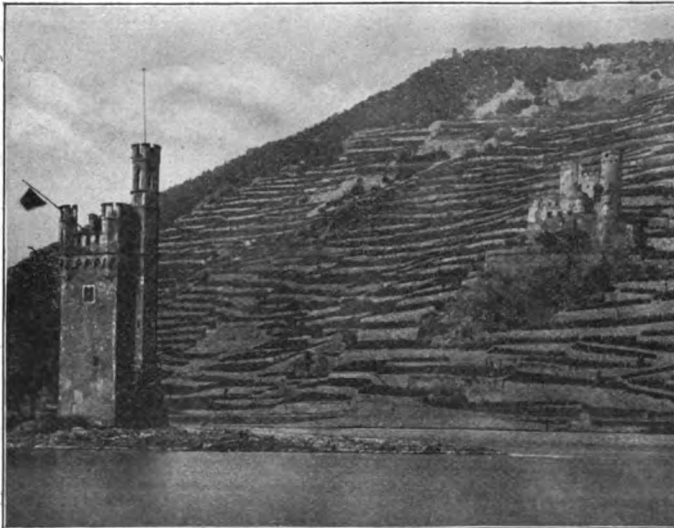
To this we replied, "The important truths of science in this branch for the various grades can be put into language that both teacher and pupil can understand." Later, when graded books containing these truths had been published, we said, "The material to fit the teacher of any grade for this work is available in the school text-books. The teacher who will not prepare these lessons in advance of the class work thereby shows unfitness to teach any subject."

THE OBJECTION THAT TEMPERANCE IS ALREADY BEING TAUGHT

Then, some man, taking an entirely opposite position, would say,

"There is a moral bearing in *all* the lessons the children are learning. This bearing every conscientious teacher always impresses. In this and other incidental ways the teachers are teaching temperance now; there is no need of a special requirement."

To this we replied that even the three R's are mediums for teaching moral up-



"Beneath me flows the Rhine, and, like the stream of Time, it flows amid the ruins of the Past."

rightness, but an incidental, inferential, accidental kind of instruction, depending on the ability and disposition of the teacher to see the possible connection of temperance or other hygiene with other branches is not what these petitioners ask for. Granted that we have this incidental moral instruction now. Your petitioners say that it is inadequate, and consequently they want more; namely, a systematic study of the physiological reasons for obeying hygienic laws together with those that show the nature and consequent effects of alcoholic drinks and other narcotics. You do not depend upon the teacher's evolving a lesson in geography out of the three R's. You order that study to be put into the school curriculum as a regular branch, and you get as results of your order such popular knowledge as to the natural and political divis-

ions of the earth as is essential to the general intelligence of a civilized community.

The children of this nation have an incontestible right to a direct and comprehensive knowledge of the truths of modern hygiene to guide their young feet in the ambushed walks of what we call civilized life. To refuse it to them is to be false to the solemn obligations of the present generation to its children who will soon take the places of those who are now on the fields of action. What we ask is only that the truth be taught. The results of such teaching we leave to Him who said, "I am the truth," and who has so made the human mind that it not only feels the force of truth but is influenced by its action.

THE OBJECTION THAT ALCOHOL IS A GOOD CREATURE OF GOD

During the discussions which preceded the passage of our first temperance education laws, we were often told that "alcohol and tobacco are good creatures of God" to be gratefully used. Then we were thankful for the discoveries of Louis Pasteur, who in searching to find the cause of the diseases of wine found as well the genesis of alcohol. From Pasteur's discoveries we know that a small germ, a mere bit of plant life that as a dry spore, invisible to the naked eye, floats in the air or rests on ripening fruits, becomes by the interference of man the parent of the whole brood of alcoholic drinks. The annihilation of this germ and others of its kind would have prevented the darkest record on the pages of human history, a record whose tale of woe and misery is blacker than that which tells the story of the world's trinity of evil, war, famine, and pestilence.

This germ, the alcoholic ferment, if left to live out its normal existence, does no harm, but when it is washed into the sweet juices which man has pressed from grapes, apples and other fruits it is unable, thus submerged, to get from the air the oxygen essential to its life. Hence, it takes oxygen from the sugar of the fruit juice, causing a chemical change in the juice by which alcohol is evolved. Through the manipulation of man this same class of ferment germs, in the form of yeast in sweet solutions of grain, produces the alcoholic liquors known as ale, porter and beer.

In view of these facts, to call alcohol "a good creature of God" is neither good history nor good science. Alcohol, instead of being a good creature of God, is a man-made scourge. More than any other agent it has despoiled in man the divine image of his Maker. We may not be able to annihilate the alcoholic micro-organisms, but we can teach the people not to drink their

poisonous products. Tobacco is a plant that grows on God's earth, but that does not prevent it from being poisonous, nor does it justify its being smoked or chewed as a good creature of God for man's use. Not every plant that grows is consequently fit for human consumption. The Athenians killed Socrates by compelling him to drink a decoction of poison hemlock.

THE OBJECTION THAT CHILDREN ARE NOT TAUGHT TO DISTINGUISH BETWEEN USE AND ABUSE

Another idea we frequently met was, "Children should be taught the difference between the use of alcohol and its abuse."

Nothing shows the ignorance of the subtle character of alcohol more than this dangerous notion which must be dispelled by definite education as to the real nature of this substance if the civilization of the twentieth century is not to be swamped by alcoholic habits. Every child, every youth, every adult in all the world has a right to know, and it is the duty of every government that would not sink into the national decay that results from alcoholism to teach its people, as a part of their public school education in hygiene, to know that

Alcohol even in small quantities has the power to create an uncontrollable desire for more.

The use of alcohol, therefore, leads to its abuse.

The abuse of alcohol leads to destruction.

Professor Fick, of Germany, the land whose vineyards on the Rhine* are world famous, says on this subject:

"There are many things whose use and abuse are very different, but there are other things whose use and abuse are the same, when use and abuse run into each other without a sharp dividing line."

This, he says, is the case with "such things as opium and alcohol, the use of which carries with it the temptation to abuse."

Exhortation to practice self-control in the use of alcohol, a substance whose nature it is to destroy self-control is an absurdity. It is folly to ask a man who is falling from the brink of a precipice to hold himself in check before he is dashed upon the rocks beneath. In such a position he has no power with which he can resist the attraction of gravitation. His safety consisted in keeping away from the brink. No one can foretell how soon the most moderate drinker may find the cumulative attraction of alcohol for itself stronger than the self-control of which he has boasted.

*See illustration on page 83.

THE OBJECTION THAT PARENTS WILL FEEL REBUKED

Another objection often met was, "The children of drinkers will feel that their parents are rebuked by lessons in these subjects."

The story that science tells concerning the hereditary effects of alcohol is appalling. The children of drinking parents have been sinned against. They are handicapped for the struggle of life by the limitations they inherit from the poisonous effects of alcohol on the parents from whom they derived their lives. The sight and experience of the misery of their surroundings is not enough. They should be taught the connection between beginning to drink and such demoralization. It is only fair to these children that they be taught that in abstinence and obedience to other laws of health is their only chance for useful lives. For the state that licenses the sale of alcoholic drinks to withhold this instruction from these children is to provide for succeeding generations of physical, mental, and moral defectives.

THE OBJECTION OF LACK OF DISCRETION

The man who could not muster a ny other objection to this study used to conclude by saying that he still thought this proposed temperance educational system represented "more zeal than discretion." Seeing in advance of one's contemporaries a needed truth, and insisting that it be given the people has always been labeled "zeal without discretion." But the great souls to whom God could trust His truth have unfalteringly pushed on, regardless alike of praise or blame, as through their efforts the world's progress has moved on and up toward the divine ideal of the Great Elder Brother.

MARY H. HUNT.

"Can you tell me the meaning of the word 'peace'?" asked Miss Gray of a little boy who had just recited a patriotic poem in which the word occurred.

"Peace means when you ain't got no children," answered the child.

"How is that?" asked Miss Gray.

"When my mother has washed and dressed us six children for school in the morning, she says: 'Now I'll have peace.'"

—A True Republic.

We are all here for a purpose—to do some part of the world's work. It is a part of the Great Plan, and to that end our strength and usefulness should be preserved. Every life should be fostered for whatever there is in it, the strong should not be pitted against the weak, but in this competitive land of ours a large measure of the usefulness of those living is lost, the strong overpower the weak and either kill them outright or have them to care for as invalids.

Equality of ability among men is an unknown thing. All

can not do the same work or work equally well, but every one can, no matter what his limitations, do something useful in the right place and be counted a red brick in the Great Wall of the world's progress—not a white brick, nor a black brick, nor a cracked brick, but a good

decent red brick, capable of holding up two or as many more as may be placed upon it in all time to come.—J. WARREN ACHORN, M. D., in *Dietetic and Hygienic Gazette*.

"A thousand unseen hands

Reach down to help you to their peace-crowned heights,
And all the forces of the firmament
Shall fortify your strength."

"O, winter, thou art warm at heart,
Thine every pulse doth throb and glow,
And thou dost feel life's joy and smart,
Beneath the blinding snow."

"Everything you do as the fruit of your own thought makes you stronger; when it is mere imitation you are weaker."



Washington house at Little Brington, Northamptonshire, England. Once the home of George Washington's ancestors.



Primary Lessons

RIGHTS OF OTHERS

GENERALLY speaking, the child gets his first idea of community life after he begins to go to school. Here, if ever, he learns the true meaning of democracy, that others are as good as he is.

In the little world of the home he has been first and foremost, or, at least, has shared this pre-eminence only with a small group of brothers and sisters. Now, to his surprise, he finds himself one of many, forced to take his chances with the rest and to stand or fall on his own merits.

The question of adjustment to these new conditions is a difficult one for the child at best, but the teacher can materially lessen his bewilderment by putting herself in his place and showing him how to meet each new problem as it arises

(1)

RIGHTS OF OUR PLAYMATES

Every American youth knows instinctively that he is endowed with "certain inalienable rights," and these he is prepared to defend at all hazards. But he is by no means so clear as to the rights of others, especially of those with whom he has most to do, his playmates.

Property rights are usually among the first to be called in question. Hardly a day passes that some child in the primary grades does not accuse another of having taken his pencil, or marbles, or some other valued possession.

This is not deliberate theft and should not be treated as such, among little children especially. In most cases, the misappropriation occurs because the child has not yet learned to hold the possessions of others as sacred as his own. He needs instruction on this point, therefore, rather than punishment, at least until he can clearly distinguish between mine and thine.

Whenever the next occurrence of this sort

takes place, make it the opportunity for a class talk on

THE RIGHT OF OWNERSHIP

Cedric, we will suppose, is tearful and indignant because Galen has his knife and will not give it back.

Galen, who has just found a knife, is merrily whittling a stick. He declares the knife in question is his because he found it.

If the matter of present ownership only were involved, the teacher could easily settle it privately between the two boys. But this is a chance to illustrate the wider truth that possession does not always mean ownership. For this reason, let the whole class hear and take part in the discussion.

As Cedric is the aggrieved one, he may begin and tell his side of the story.

Ask him where he got his knife in the first place. When did he have it last? What kind of a knife was it? How would he know it again if he should see it? Why does he think this is his knife?

Now for Galen's story.

Find out how long he has had the knife that Cedric claims. How did he come by it? Why does he think it belongs to him?

At this point find out what Galen owns that he cares most about. Perhaps it is a pet dog. If so, ask him what he would want Cedric to do if this dog were to stray away and Cedric should find him.

Would he like to have finding mean keeping in that case? Why not?

Bring up other illustrations of a similar nature, giving each child in the class a chance to say what he would want to have done if the loss were his.

When does a thing that one finds not belong to the finder?

Suppose another case.

Belle finds twenty-five cents in the road on her way to school.

No one in her grade has lost any money, and she can not find any one who claims it. What should she do with it?

Why would it be right for Belle to keep this money, when it would be wrong for Galen to keep the knife?

When does a thing that one finds belong to the finder?

Let the children tell as well as they can what makes anything their own. After thinking how they come by their clothes, their toys, their pocket money, etc., they will come to the conclusion that a thing is theirs if it has been given

to them, or if they have earned it or bought it with their own money, or if they have found it and can not find the owner.

What do we want other boys and girls to do with things that belong to us?

What must we do with things that belong to them?

THE RIGHT TO FAIR PLAY

There is another thing that our playmates have a right to besides their own property. They have a right to fair play.

You all know what we mean by fair play in games. It means giving all an equal chance on the playground, and changing places in games so that no one will have the best place all the time.

But we need fair play everywhere else as well as in games. One of the times when we need especially to think about it is when we have been using something that belongs to some one else.

Harry has lost his pencil, we will say, and has had to borrow Dick's. What must he do with it as soon as he is through using it?

Perhaps it was a nice new pencil with a good point when Harry borrowed it, but he has used it until the point is all worn off. What should he do before he returns it? What should he do if he happens to break the pencil or spoil it in any way?

What would you want Harry to do if he had borrowed the pencil from you and broken it?

How do we want our playmates to treat everything that belongs to us when they have borrowed it? How should we treat their things when we borrow them? How is this fair play?

Another time when we need to play fair is when we have anything to divide with our playmates.

A gentleman once asked two boys how many peaches each would have if he gave them ten together.

The older boy said, "I don't know. If we divide them while you are here, we'll get five apiece.

"If Ray divides them when we are by ourselves, he'll have eight and I'll get two.

"If I divide them, I don't know as he'll get any."

Was this fair play? Why not? What is fair play in dividing things?

Name other ways in which we want our playmates to give us fair play. When must we play fair with them?

SOMETHING TO REMEMBER

Everybody has a right to his own things.

Nothing that we find belongs to us unless we can not find the real owner.

We must take as good care of other people's things as we want them to take of ours.

If we borrow anything we must return it in as good shape as when we got it.

If we lose or spoil anything that belongs to one of our playmates we must replace it.

Everybody has a right to fair play.

Fair play means treating other boys and girls as we want them to treat us.

Fair play means never being selfish.

(2)

RIGHTS OF OLDER PEOPLE

Grown people have rights as well as children. One of these is a right to our respect because

they are older than we.

How can we show respect to older people?

We can listen politely when they speak to us. We can give them our seats and stand instead of them, when there are not enough seats for all. Boys can raise their hats and girls can bow when an older person speaks to them.

Another way of being respectful to old people is never to make fun of them, or to laugh if anything they do seems queer or strange to us.

Have the children themselves think of additional ways in which they can show respect to older people in their own homes; to those whom they meet on the street; to strangers.

Older people who take care of us and help



"Finding is keeping."

*See opposite page.

us with our work and lessons until we are old enough and wise enough to look after ourselves have a right to our obedience as well as to our respect.

Who are the people at home whom we should obey? at school? elsewhere?

All country children have no doubt heard the mother hen clucking to her chickens when a hawk or some other danger is near, and have seen how quickly even the smallest chickens obey her call. What would happen if they did not obey at once?

It is just as important for children to obey the older people who have them in charge as it is for chickens to obey the mother hen. They may not always be in danger if they do not, but nothing would go right at home or at school if every one did as he chose.

What part of the body is it that tells all the other parts what to do? Why must all the other parts of the body obey the head?

Who is the head of the home? of the school? of this grade? Why must all the others obey the head in each of these cases?

(3)

RIGHTS OF YOUNGER PEOPLE

If anybody were to ask you what rights babies or very little children have, quite likely you would think that they are not big enough to have any at all, but you would be very much mistaken.

First of all, they have a right to be taken care of until they are old enough and large enough to take care of themselves.

What are some of the things that a little child needs to have done for him every day? What would become of him if he had no one to give him anything to eat, or dress him, or provide a home for him?

Little children have just as good a right to fair treatment as any older person has.

Why would it be even more unfair to crowd a little child off the playground than a person of your own size? Why would it be unfair to use his playthings when he wanted them himself? To make him do things he does not want to do?

How do we want people who are bigger and stronger than we are to treat us? How then should we treat those who are smaller and weaker than we are?

SOMETHING TO REMEMBER

Older people have a right to our respect.

We must think of them before we do of ourselves.

We must try to be helpful.

Our parents and teachers have a right to our obedience.

Those that are younger and smaller than we are have a right to our help.

They have a right to be treated fairly at all times.

They have as good a right to their own things as we have to ours.

HIDDEN TREASURES

Little people, do you know
What is underneath the snow?
Flowers pink and blue and white,
Big red roses, all a-glow,
In their dark roots folded tight
Till the merry south winds blow.

Do you know what secrets deep,
All the woods of winter keep?
Ah! the darling little things,
Down below the snow-bank's heap!
Fern leaves curled in tiny rings,
Violet babies fast asleep.

Little folks, now do you know,
February soon will go?
Then will come the sunny Spring,
When the snows will melt, and oh!
How the meadow-brooks will sing,
And the daffodillies blow.

— *Youth's Companion.*

Mrs. Smith (thoughtfully)—“I'm afraid I shall have to stop giving Bobby that tonic the doctor left for him.”

Mr. Smith (anxiously)—“Why, isn't he any better?”

Mrs. Smith—“Oh, yes! But he has slid down the banisters six times this morning, broken the hall lamp, two vases, a pitcher and a looking-glass, and I don't feel as if I could stand much more.”

Sunday School Teacher: “Why did Adam and Eve clothe themselves after the fall?”

Bright Scholar: “'Cause winter comes after fall?”—*Puck.*

The little girl was writing a composition on the rabbit, and never having seen a creature of the sort, inquired of her teacher whether the rabbit had a tail.

“Yes, a small one. None to speak of,” answered the teacher.

This is the way the little girl introduced the matter in her composition:

“The rabbit has a small tail—but you musn't talk about it.”—*Philadelphia Press.*

BLIND GUIDES

DURING the last thirty years there has been conducted in the scientific world a vast amount of precise and exhaustive research to ascertain the real nature of alcohol and consequently the inherent effects of alcoholic drinks and other narcotics upon the human system. The truth found by these searchers is an emphatic contradiction of the old ideas, and shows that there is no assured safety in even the moderate use of alcoholic beverages for persons of any age.

The student of this research finds that science in the United States has made fewer valuable contributions to these investigations than have the scientists of Europe.

But while, up to the present time, this country has not led in such investigations, it has led in utilizing them. We have put these findings of scientists of all lands into popular language as a part of physiology and hygiene, and have enacted laws requiring these truths taught the pupils in the public schools of this nation.

Thus before certain persons, learned in other respects but who look upon any agitation of the alcohol question as fanaticism, hardly knew it, the children of the whole nation were learning with other laws of health that modern science teaches total abstinence from alcoholic drinks and other narcotics. Then came the false charge from these belated gentlemen that the schools are not teaching the truth about alcoholic drinks.

In the beginning the charges were vague, but they influenced in a way some candid people who said, "We do not know about the science of this question, but if a medical professor says the school text-books are wrong, they ought to be made right." The critics were challenged to prove and point out the alleged inaccuracies. Thus driven to bay, they now state through the Committee of Fifty that the text-books are inaccurate because

First: They are not in harmony with author-

ities like Fothergill and other ancients whose books, still in the libraries of some medical schools and other colleges, teach the exploded idea that alcohol is a food because it is oxidized in the system.

Second: They aver that it is inaccurate to designate alcohol as a poison. But with all their juggling with definitions they can not prove that it is not a poison, that is, a substance whose nature it is when absorbed into the blood to injure health and destroy life.

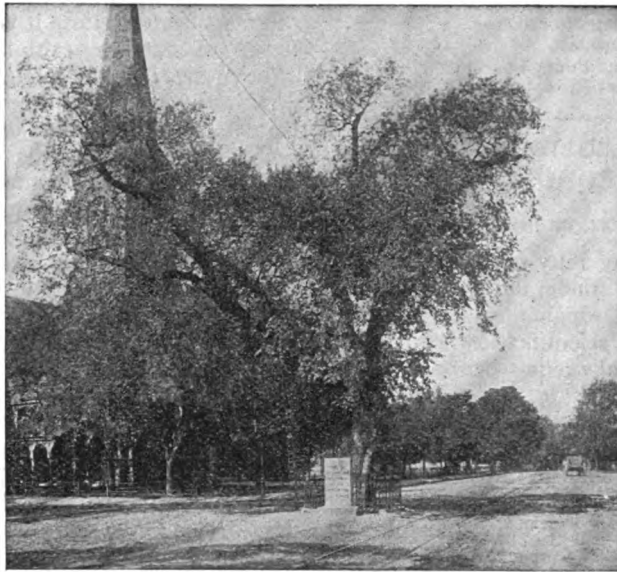
Third: They criticise the teaching that moderate drinking is unsafe. But they can not guarantee to any moderate drinker of any age that alcohol will never create a desire for more that can not be controlled but will be destructive. Lives are endangered, souls are imperiled by denying God's truth that science teaches total abstinence.

Fourth: They want instruction in temperance physiology to be confined to the upper classes in the public schools. But they can not prove that many who would thereby be deprived of this study because they early leave school to become bread-winners will have no need of the guiding influence of this study to help them resist temptation.

The real trouble is that the indorsed school text-books on

physiology in use in the public schools of this country are far in advance of the knowledge or wishes or habits of their critics who mistakenly think that what they do not know or approve or practice must therefore be wrong. It has been wisely said that the man who does not know but who thinks he knows is one of the most dangerous of blind guides. In the present situation it is comforting to remember Lincoln's words. "No man can fool all the people all the time."

There is a perennial nobleness and even sacredness in work. Were he never so benighted, forgetful of his high calling, there is always hope in a man that actually and earnestly works. In idleness alone there is perpetual despair.—*Carlyle*.



Washington Elm, Cambridge, Massachusetts.*

*Courtesy of Boston & Maine Railroad.

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Self is the only prison
That can ever bind the soul;
Love is the only angel
That can bid the gates unroll.

And when he comes to call thee,
Arise and follow fast.
His way may lead through darkness,
But it leads to light at last.

THE NATION'S BULWARK AGAINST ALCOHOL

TEMPERANCE EDUCATION IN THE SCHOOLS

THE Committee of Fifty recently published the report of their Physiological Sub-Committee in which the latter attacks the present system of scientific temperance instruction now universally required in the public schools of this country.

The National Woman's Christian Temperance Union at its last convention adopted a reply to the above report, submitted by its Bureau of Scientific Temperance Investigation and the presidents of eleven of the largest states, and ordered for circulation a first edition of 50,000 copies.

This *Reply*, a twenty-six page pamphlet, shows that the grounds on which the Sub-Committee base their proposal to overthrow this system of instruction are fallacious.

First, In attempting to secure foreign opinions on this subject, the Sub-Committee misrepresented the amount of time required as 250 hours for the study of *alcohol*. In fact, only 330 lessons (the equivalent of about 140 hours), distributed through nine years, is the maximum requirement for the whole subject of *physiology and hygiene*, not more than one-fourth (and usually not more than one-fifth) of which is ever required to be given to alcoholic drinks and other narcotics.

Second, The Sub-Committee's chief criticisms upon the school literature on this subject are that it teaches total abstinence, and that alcohol is not a food but a poison.

The *Reply* shows that the Sub-Committee presents no evidence proving alcohol a food in the sense in which this word is commonly understood, that is, a substance whose nature it is when absorbed into the blood to nourish the body without injuring it. The conclusion of the Sub-Committee, that alcohol is a food because it is oxidized in the body and can furnish energy, is contradicted by many authorities who agree with Professor von Voit of Munich, quoted in the Report of the Sub-Committee, that

"A substance may be consumed by the body and liberate energy, and yet be harmful."

Other poisons are oxidized in the body, yet are never called foods.

The Sub-Committee presents no evidence proving that alcohol is not a poison according to standard definitions of a poison, that is, a substance whose nature it is when absorbed into the blood to injure health and destroy life.

As to the so called moderate use of alcoholic drinks, the Sub-Committee produced no proof that it is safe. Whether one is susceptible to such drinking "one finds out," says Professor Gruber of the Royal Institute of Hygiene, Munich, "only by playing a game of chance with his life, which is a dangerous experiment."

The Sub-Committee, to sustain their charge that the indorsed physiologies are unscientific, instead of comparing these books with results of recent investigation, compared them with opinions which, in many cases, are old, discordant, or unsupported by modern investigations.

Third, The Sub-Committee suggests that the schools should teach "that when [alcoholic drinks are] taken habitually, it should be only at meals and, as a rule, with the last meal of the day." The *Reply* says this suggestion "implies approval of alcohol being thus taken. Not until it is proved that alcohol thus drunk does not have the power to create an uncontrollable and destructive desire for more will such teaching be scientifically or ethically safe." The man who drinks with meals or after the day's work is done is finding one business door after another closed to him.

Fourth, The Sub-Committee's recommendation to confine this instruction to older pupils, especially those in the high schools, the *Reply* shows would postpone it in many cases until after cigarette and other bad habits had been formed, and would deprive great numbers who have to go to work before they reach the upper grades of any warning instruction on this subject.

Fifth, Attention is called to the fact that the Sub Committee, claiming that there are practically no good results from this instruction, ignored testimony to its beneficial results elicited

recently in a careful canvass of New York State, testimony which was sent to every member of the Committee of Fifty nearly eight months before the publication of their report.

Similarly, the Sub-Committee ignored the increase in the average length of life and the decrease in the rate of gain in the per capita consumption of alcohol during the past decade, to both of which this instruction, which became general during that decade, may be said to have contributed.

It is admitted in our own and other lands that the teaching in our public schools that alcohol injures working ability has contributed to the greater sobriety of the American workman, and to his consequent increased productive ability, which is one factor in giving to our nation the commercial supremacy it now enjoys.

After briefly reviewing the other papers in the Sub-Committee's Report the *Reply* concludes:

"The experimental and other investigations concerning the physiological action of alcohol in the *Report of the Committee of Fifty* do not prove the present system of temperance instruction 'unscientific' or 'undesirable,' and the opinion of the Sub-Committee that it is undesirable reveals a deplorable insensibility to the grave moral perils of that moderate drinking which the instruction that the Sub-Committee recommend would encourage. The discussion which has preceded and accompanied the legislation requiring this instruction during the past twenty years has been a continuous appeal to reason which has met with as continuous a response. The American public is too intelligent, and too conscientious to have adopted this movement hastily or to retire from it in the face of the good it is doing."

"The safety of our country lies in the education of her people."

"Education is a better safeguard of liberty than a standing army."

*Courtesy of Frederick A. Stokes Company. See Book Notices, page 96.

THE STARS AND STRIPES

THERE are many flags in many lands,
There are flags of every hue,
But there's no flag, however grand,
Like our own "Red, White, and Blue."

I know where the prettiest colors are,
And I'm sure if I only knew
How to get them here, I could make a flag
Of glorious "Red, White,
and Blue."

I would cut a piece from the
evening sky,
Where the stars were shin-
ing through,
And use it just as it was on
high
For my stars and field of
blue.

Then I'd want a part of a
fleecy cloud,
And some red from a rain-
bow bright;
And put them together side
by side,
For my stripes of red and
white.

Hurrah for the flag! our
country's flag,
Its stripes and white stars
too;
There is no flag in any land
Like our own "Red,
White, and Blue."

—Selected.



"From Greenland's Icy Mountains."*

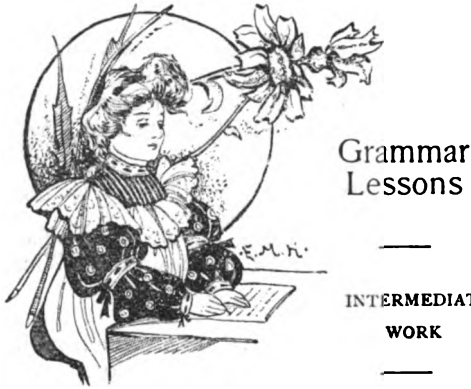
Teacher—"Can any little girl tell me who was Columbus?"

Sadie (frantically snapping her fingers)—"I know."
Teacher—"Well, Sadie?"

Sadie—"Columbus, the gem of the ocean."—*Philadelphia Press*.

"Children, why does that flag hang there?" oratorically asked a schoolroom patriot, pointing to a flag draped behind him.

"Please, sir," piped up a voice from the rear, "it is to hide a dirty spot on the wall."—*Philadelphia Record*.



BEGINNINGS OF CITIZENSHIP

FARMERS have a saying that a good year for crops is also a good year for weeds.

Under the snows of the Arctic regions or beneath the blazing sun of a tropical desert the earth may lie dormant, but, given favorable conditions of soil and climate, something is sure to grow. Whether the fields shall smile with harvests or fester with weeds depends on the skill and diligence of the husbandman.

The analogy holds in the world of men. In barbaric lands generations come and go leaving no appreciable mark behind. Life with them is existence only. Progress is at a standstill. But among civilized peoples there can be no such thing as stagnation. Conditions are such that there must be growth of some sort, either the flower and fruit of noble achievement or the weeds of corruption and vice.

Teachers divide with parents the responsibility as well as the privilege of shaping the character of the young citizen, for the trend of his future is decided before he casts his first ballot, not afterward. He must learn the beginnings of citizenship, then, in the home and school-room. Here and now he must come to know the necessity for organized government, and gain at least an inkling of the duties as well as the rights of every participant.

Civics is the driest and least attractive of studies as presented in the average text-book, but if freed from all abstractions and brought home to the child as the way in which *his* district, *his* town, *his* state, and *his* country are managed, it invariably becomes of absorbing interest. The suggestions that follow as to the need of organized government in the town, and the individual citizen's relation to such government may easily be adapted to similar work concerning the state and nation. Class discussions on these subjects may well take the place of other general exercises this month in schools which make no special provision for patriotic studies.

THE NECESSITY FOR ORGANIZED GOVERNMENT

Read or tell to the class a brief story describing Indian life in this country at the time Columbus discovered America, bringing out especially the facts that the wants and consequently the occupations of these people were few and simple, that they seldom had fixed homes or private property, and that their chiefs or rulers were chosen almost entirely because of their skill in war.

After the reading, call for some of the ways in which life among the first white settlers differed from that of the Indians. Ask why civilized people have more wants than savages. How do these numerous wants increase the number of their occupations?

The early settlers in this country lived in villages for protection from wild beasts and enemies. Why do more people live in towns and cities nowadays than in the country? Call attention to the fact that people who live far apart from one another can not afford to pave their streets or build sewers and waterworks, but if many live near together they can combine to do this.

In that case they must have a government of their own. Find how they can get it, and what are the provisions of your own town or city charter. What are the first officers needed under such a government? How are they chosen? What are the duties of each?

Find what your town has done this year. A great deal of money is needed for all these things. How can a town raise money? What is this year's tax rate? How much are your father's taxes?

DUTIES OF THE CITIZEN

We often hear people grumbling over the payment of taxes. Let us see if it is fair for a man who has bought a house and paid the full price for it to be obliged to pay taxes also on it every year. Why does such a man take out an insurance policy on his property as soon as he has bought it? Taxes as well as insurance are a protection to property. They pay for policemen and firemen, and also for a pure water supply, good sidewalks and street lamps, schools and libraries, and all the other conveniences that a city furnishes. Nobody buys all these things when he buys property, so he must pay extra for them year after year.

Every business man finds that he must enforce certain rules in his office or shop in order to have his work done as it should be. So there must be rules, or laws, as they are called, in a town or city or state in order that the business of each may be properly carried on. Who are bound by the rules of a business office? by the laws of a town?

What laws are in force in your town? Who makes these laws? Who are in duty bound to obey them? A person who is disloyal to his country in time of war is called a traitor, but one can be disloyal in peace as well as in war, by failing to obey the laws of his country.

There never was a government any more than a business that could run itself. In order, then, to have a prosperous state, or city, or town, every citizen must do his part to see that only good laws are made, and also to see that each is obeyed.

No man or woman can be a good citizen, or help to make a good government, unless each begins to learn how as a boy or girl. To obey the rules and regulations of the schoolroom helps to make one a good citizen; to disobey these rules and regulations helps to make one a bad citizen. What are the regulations of this school? Think of a reason for each. What changes would you make for the best good of the school if you had the opportunity to do so?

GOOD AND. BAD GOVERNMENT

Americans are wont to think that they have the best government in the world. To find whether this is true, we must think what kind of rulers it has, because good rulers make a good government, and bad rulers a bad government.

Describe the kind of person whom you think would make a good ruler; a bad ruler. What kind of a boy would each be likely to be in school? What kind of a man would each be after he leaves school?

Who are the real rulers in the United States? Where do they live? How are they doing their work in your town? When does a person in the United States begin to be a ruler? How can he learn to rule well? In what respects does your description of a good ruler fit you? What else do you think you need to make you a good ruler?

Read aloud to the class the address of the German Kaiser to his sons on their confirmation day, printed on the following page. What does

he think are the necessary qualifications of a good ruler and a good man? Read or tell how Queen Victoria was fitted in early life to govern a great people. Does a young prince have to study less, or more than other people? Why is he taught to live simply, when he might have everything that money can buy?

If a pound of iron ore is to be made into a shovel, it can be done with very little effort. But if it is to be made into watch springs, it must first be tempered into steel and then manipulated in a thousand ways. The boy or girl who is born in savagery may grow up without education or training. Not so the American

youth. He is born a prince, and must fit himself to wear the purple right royally.



Emperor William II of Germany and Crown Prince Frederick William.

ANXIOUS FOR QUESTIONS.—Little Johnny, having been invited out to dinner with his mother was commanded not to speak at the table, except when he was asked a question, and promised to obey. But at the table no attention was paid to Johnny for a long time. He grew very restless, and his mother could see that he was having a hard time to "hold in." By and by he could stand it no longer. "Mamma!" he called out, "when are they going to begin asking me questions?"—*Puck*.

The Minister of Public Instruction in Hungary has introduced lessons upon alcoholism, into the vacation courses for Hungarian teachers. He has asked the anti-alcohol society of Budapest to furnish him the necessary lecturers.

L'Abstinence.

Under the snowdrift the blossoms are sleeping,
Dreaming their dreams of sunshine and June;
Down in the hush of their quiet they're keeping
Thrills from the throstle's wild summer-swung tune.

—HARRIET PRESCOTT SPOFFORD.

THE KAISER AS A PREACHER

MY DEAR SONS: In this moment, when we are about to express our congratulations that you have now passed out of the period of boyhood and into that of vigorous manhood, as also into membership of the congregations of the Lord in order to work also in this sphere, it is my wish as your father to send you out with a word of good counsel.

The present day is for you in a spiritual sense, what, from a military point of view, that day signified on which you took your oath of allegiance to the flag of your country and entered the army. With this latter step I would compare your baptism. By that act you became warriors of the Lord. With the present day you have, so to speak, become of age in matters of faith. The arms and the weapons of which you are to make use have been put into your hands by the preparations of your pastors.

The application of these in the many contests of actual life will now be left to you. In this respect, too, you will still not be without further guidance by your spiritual leaders; but notwithstanding all this help, in the end every Christian must himself learn to use his own weapons. In a very eminent sense, a Christian can be compared with a soldier, and in his warfare the Christian must use only the weapons which the Lord Himself has put at his disposal.

In the address which your pastor delivered in your presence he very properly spoke of the great importance of "personality" in the Christian's walk and work. It is this thing which in my conviction the Christians of our day need more than any other. Everything in this career as a Christian depends upon the develop-

ment of this personality. You have in your instruction heard much of great men, of wise men, of statesmen, kings, and poets. You have learned many of their sayings and principles and have been incited to noble thoughts and highest ideals by these. But you must never forget that they are all only mortal men, and their sayings only human wisdom. None of their words can compare with the words of him who is our Lord and Saviour. And you must not forget that in the vicissitudes of life you will meet with men of prominence who will entertain thoughts on the subject of religion and of the person of Christ that are different from those which have been taught to you. But there never has been a being like unto Him, and the words which he spoke are the words of the living God and words that produce life. His teachings will continue to be vital forces long after all the sages and savants of the world have been forgotten.

When I look back upon my personal experience, I can give you this assurance, that the center and heart and kernel of all human life, especially if it is one of responsibility and of work—and this has become clearer and clearer to me every year—is found solely in the position which a person takes toward his Lord and Saviour. Even the most determined doubter of the divinity of Christ can not but recognize this wonderful personality. He is one who can not be ignored. To-day he still walks among men, comforting, consoling, strengthening; and everybody is compelled, directly or indirectly, to live the life that he lives, to conduct the office that he holds, to do the work upon which he is employed, based upon the attitude which he takes toward Christ. He is the only helper.

IN THE OPEN

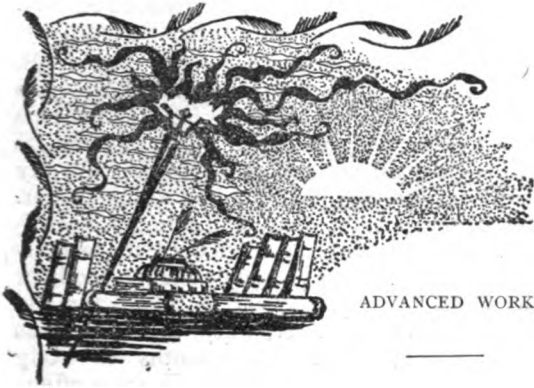
I HAVE thrown the throttle open and am tearing down His track;
I have thrown it out to full-speed and no hand can hold me back!
'Tis my arm controls the engine, though another owns the rail,
But for once I'm in the open and the yard-lights pass and pale!

*Green lights! Red lights! He has hung His signals out!
Caution here! Danger ho! And what's the man about!
'Tis true he owns the Engine, to do as he has done,
But how about the Final Word—when he ends the run?*

So from siding on to junction-point now I shall have my day;
I have stopped to read no orders but I take the right-of-way.
Down the open grade I thunder and around the curve I swing,
For my hand is on the throttle and my heart shall have its fling!

*Light lost! Life lost! Flag, O flag the others back!
Switch the wreck! Ditch the wreck! Dare any block His track?
There creeps into the Terminal the man who had his day,
But I wonder, O my soul, just what his God will say!*

ARTHUR STRINGER in *McClure's*.



RESPONSIBILITY TO OTHERS

IT is the fashion in our day to dwell on the evils of unrestricted immigration, and to petition Congress to bar out the horde of illiterate foreigners that come each year to American shores. But there is another side to the question. Our fathers came to this country to improve their condition, to do better for themselves than was possible in Europe. The immigrant of today comes with the same laudible desire, and who are we to bar the door against him.

Doubtless we might have a better government if both immigration and the suffrage were greatly restricted. Our large cities in which foreigners chiefly congregate are notoriously misgoverned, as compared with those of Germany, France, and other European countries; but no believer in the ultimate recoverableness of human nature would exchange American initiative and self-reliance for the paternal oversight of Europe. One learns to do by doing, not by being done for; and slow as is the work of educating the whole people, rather than a select class, the end richly justifies the means. Rome conquered the world but sank under the onslaught of the Goths and Vandals; not because barbarism is stronger than civilization, but because she was already rotten with vice. Her conquest by those fierce tribes in reality laid the foundations for more democratic forms of government and a better race. If America sinks to the level of her immigrant invaders, instead of raising them to the height of her opportunities, it will likewise be because she has not the strength and virtue she appears to have. The more virile race will always triumph, for though civilization may seem at times to advance in receding waves, it is as surely onward as the incoming tide.

POWER THE MEASURE OF RESPONSIBILITY

Recall to the class Christ's parable of the Ten Talents. Why was the one talent of the man who made no use of it taken from him and given to the man who already had ten talents? Washington was in command of the entire

American army in the Revolution. How much more was expected of him because of this high position than of any private in the ranks? When the Iroquois theatre in Chicago was burned recently, the mayor of the city, as well as the manager of the theatre, was indicted for manslaughter. What connection could the mayor be said to have with the matter?

Why is it that the scientific world is eager for the latest discoveries of Edison or Marconi, or Finsen or Curie? That crowds hang upon the words of a great orator or preacher? That Christ himself after nineteen hundred years is still the greatest personality in the world?

America today has greater wealth and wider opportunities than any other country. Why do all these riches and power make it the more incumbent upon every citizen to use them for others as well as for himself, even to sharing these blessings with the less favored of other lands?

OBLIGATIONS GROWING OUT OF RESPONSIBILITY

Education has been said to be valuable only as far as it enables one to earn his own living, to give to others, and to increase his powers of enjoyment. The last depends upon the other two, for no one can fully enjoy what he has not both earned and shared with others.

Similarly, our country and our form of government can mean nothing to the citizen until he has proved his right to be known as such, and has done what he can to make others good citizens too.

There are recent arrivals from foreign lands in most of our schools, especially those of the large cities. What have our native-born citizens learned of civic virtue, of honesty, truthfulness, respect for law and authority, which they are ready to pass on by example to these newcomers?

The high school student considers himself much the superior of the boy who has early left school to earn his own living. Probably he has a superior mind. Has he cultivated also a superior conscience, one that will make him scorn a mean action and stand consistently by his principles no matter what the cost?

The straightforward business man looks with contempt upon one who votes at the bidding of the ward boss. Does he himself attend the primaries and do his part to secure the nomination and election of good men only? Does he vote to instruct his representatives in the legislature to vote on the right side of every question, and to stand always for good government?

With his wealth of opportunity of all kinds, the American citizen, young and old, has inherited corresponding obligation to society and also to the state. Only as he fulfils these obligations has he the right to cast a stone at others who are less favored than himself.

BOOK NOTICES

CHILDREN OF THE ARCTIC, by the Snow Baby and her Mother, Frederick A. Stokes Company, New York.

Last year, Mrs. Peary gave to the child world a charming account of the first white baby born north of the Arctic Circle. This year, little Ahnighito and her mother write of their joint experiences in those frozen lands, with many an interesting peep into Eskimo homes. The pictures with which the book is profusely illustrated tell as plainly as the printed page of the work and play of these fur clad children of the north, of rides in dog sledges over the ice and snow, and of the excitement of having one's ship frozen in for the winter. Through the courtesy of the publishers we are able to reproduce, on page 91, one of the pictures of Ahnighito in her unique Eskimo costume.

HOW TO KEEP WELL, by Floyd M. Crandall, M. D. Price, \$1.50 net. Doubleday, Page & Company, New York.

What the study of physiology and hygiene, now legally a part of the public school curriculum throughout the nation, is doing for the children and youth of the land, this book essays to do for the adult; namely, explain clearly and in popular language the principles and practice of right living, and the prevention of disease as far as now known by the medical profession. In addition, it explains the nature and manner of treatment of such diseases as do not usually require a doctor's care. The author's twenty year's experience as a practicing physician enables him to write out of full knowledge of his subject. The chapters on the care of the sickroom, particularly in infectious diseases, and on the diet of children should prove of special value to mothers.

THE A. B.-Z. OF OUR OWN NUTRITION, by Horace Fletcher. Postpaid, \$1.14. Frederick A. Stokes Company.

Eat only when hungry. Eat nothing but what is craved by the normal appetite. Thoroughly chew all food before swallowing. Keep the mouth and teeth clean. Avoid fear, anger, and worry. These simple rules sum up Mr. Fletcher's views on the eating question, and are his solution of the modern food problem. It is unquestionable that most people violate one or more of these principles every day of their lives, and thereby forfeit that increase of energy and endurance if not health itself to which they are rightfully entitled. A better state of affairs can come only through wider popular knowledge of true hygienic living, and to such knowledge this book is a helpful contribution.

THE GLUTTON OR EPICURE, by Horace Fletcher. Postpaid, \$1.12. Frederick A. Stokes Company.

Issued as a companion volume to the "A. B.-Z. of Our Own Nutrition" noticed above, this book aims to explain still more fully the benefits of economic body nutrition. The enjoyments of the table are not willingly foregone by any one, nor need they be, according to the author. On the contrary, the pleasure of eating is intensified by masticating the food until its taste is eliminated. On this plan, only enough food for the needs of the body will be taken, for the appetite will be appeased when that point has been reached. The small quantity of body waste which results, and its freedom from offensive odors is proof that the food thus taken is almost entirely utilized by the body and under absolutely healthful conditions.

FOR THE NEW YEAR

The short noon weeps that the hours are fleet
And hides the steps of the sun's bright feet :
But the moon laughs low in the midnight sky,
For she sees the sun's face from her throne on high.

Behind the blank of the vaporous seas
Gleam still, as of old, the Hesperides.
The bloom of the rose tree is withered and goes,
But a new flower sleeps in the root of the rose ;
And spring shall come with a flute and a fire,
And wake new passion and old desire.
The scarlet poppies shall flame and pass
Out of the clusters of cool young grass ;
And the brook shall dance against warm green leaves
And the brown fields murmur with shocks and sheaves.

Out of the city that roars and cries
I send you a dream of delight of the eyes.
Out of the heart of the winter-time
I send you a leaf from the young year's prime.
Out of the toil and the trouble of night
I send you a song of the dawn's delight.
For all things die to rise again,
Save pain and sorrow, the shadow of pain ;
And beyond the reach of the rack and the rod
There remaineth a rest for the people of God.

—EDMUND GOSSE.

PHYSIOLOGY TOPICS FOR MARCH

PRIMARY—Cleanliness and Care of the Body. Sense of Hearing. Sense of Smell. Right and Wrong use of Grains. Harm in Beer.

INTERMEDIATE—Food. Organs of Breathing. Skin and its Care. Cells.

ADVANCED—Special Senses. Organs of Respiration and Excretion.

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MARCH, 1904

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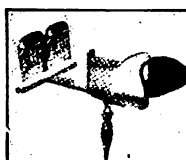
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School Physiology Journal

Vol. XIII

BOSTON, MARCH, 1904

No. 7

THE CALL OF SPRING

BY JOHN RUSKIN

A WAKE! awake! the stars are pale, the east is russet gray:
They fade, behold, the phantoms fade,
that kept the gates of day;
Throw wide the burning valves, and let the golden streets be free,
The morning watch is past—the watch of evening shall not be.

Put off, put off your mail, ye kings, and beat your brands to dust!
A surer grasp your hands must know, your hearts a better trust.
Nay, bend aback the lance's point and break the helmet bar;
A noise is on the morning winds, but not the noise of war.

Among the grassy mountain paths the glittering troops increase—
They come! They come!—How fair their feet—
they come that publish peace!
Yea, victory! fair victory! our enemies' and ours!
And all the clouds are clasped in light, and all the earth with flowers.

PHYSIOLOGY IN THE PUBLIC SCHOOLS

BY BERTHA L. PADDOCK

DR. JAMES E. PEABODY said in an address before the National Educational Association in Boston last summer, "Physiology has not hitherto had an *honored* place in the school curriculum."

When I read that sentence a vivid recollection came to me of expressions of the face and inflections of the voice that have followed the reply to my question, "What do you teach?" One who had a short experience said, "I had to teach physiology. They always give it to the new teacher. Nobody wanted it." Others say, "Do you like it?" or "Don't you hate it?"

The fact that discussions upon this subject have been so generally omitted from associations and institutes also indicates that its importance is overlooked. I have sometimes felt that it is looked upon as a necessary evil in our schools, necessary because the law requires it to be taught, but one that would better be ignored whenever possible.

HERBERT SPENCER'S OPINION OF PHYSIOLOGY

Herbert Spencer evidently did honor physiology teaching. Allow me to quote from him at length.

"How to live?—that is the essential question for us. Not how to live in the mere material sense only, but in the widest sense. The general problem which comprehends every special problem is the right ruling of conduct in all directions, under all circumstances. In what way to treat the body; in what way to treat the mind; in what way to manage our affairs; in what way to bring up a family; in what way to behave as a citizen; in what way to utilize all these sources of happiness which nature supplies; how to use all our faculties to the greatest advantage of ourselves and others; how to live completely?"

"If any one doubts the importance of an acquaintance with the fundamental principles of physiology as a means to complete living, let him look around and see how many men and women he can find in middle or later life who are thoroughly well. We infer that, as vigorous health and its accompanying high spirits are larger elements of happiness than any other things whatever, the teaching how to maintain them is a teaching that yields in moment to no other whatever. And therefore we assert that such a course of physiology as is needful for the comprehension of its general truths, and their bearings on daily conduct, is an all-essential part of a rational education. Strange that the assertion should need making! Stranger still that it should need defending!"

ITS PRESENT RANK IN THE SCHOOLS

Dr. Peabody says that the reason for physiology not being an honored subject lies in the improper methods of teaching and in the lack of preparation of teachers, and says that in the minds of too many pupils physiology is synonymous with instruction as to the effects of alcohol and tobacco. He says that the subject has often been taught by teachers who have not made a specialty of biology.

Of course this is true and must remain true as long as it is required by law that physiology be taught in all the public schools. It can not be expected that all teachers shall make a specialty of biology, and it does not seem to me necessary in order that physiology should hold a more honored place than it now does.

The chief need is that all teachers thoroughly believe in its importance as a useful part of the

education of the boys and girls, and come to its instruction with a determination to make it have so close a connection with the pupils' daily life that it can not fail to be of interest to them.

What we need to do is to forget that we are teaching physiology because the law says we must, and teach it because we believe that through it, if it is properly received by our classes, the health of individuals will be improved, the average term of life will be increased, insanity and pauperism will decrease, infectious and contagious diseases will not become epidemic, the home will become more wholesome, our streets will be better cared for, Boards of Health will act more intelligently, there will be fewer lives wrecked with narcotics, and every life may become sweeter and better.

THE OBJECT SOUGHT BY THE TEACHING

If we wish these to be the results of our teaching, we must consider our methods as well as our motives. The question as to whether this subject of physiology should be studied for knowledge or information, or as a disciplinary study, does not require much discussion. Mr. Horace Scudder's account of how the great Agassiz introduced him to the study of biology by leaving him alone with a small fish with directions to find out all about it, how he struggled with it for days only to find that there was still some important law that remained undiscovered, will illustrate how a science may be taught as a disciplinary subject.

Now it is evident that even if it were possible it would not be wise to enter into the study of physiology by any such method in schools below the college. In medical colleges there must, of course, be an opportunity for pupils to learn physiology and anatomy at first hand as well as from text-books. But it is generally recognized that physiology is studied in our public schools mainly for information or knowledge, and the disciplinary value will be incidental and not primary, and will be of a kind similar to that secured by studying any subject where the main source of information is a text-book, or lectures.

Some high schools, especially those best equipped, follow the laboratory method in teaching physiology. The more laboratory work done, the more valuable does it become as a disciplinary subject, and the better will the pupil be fitted to take up other work in biology either in high school or college. So far as I know, however, no high school building in this [Franklin] county is properly equipped for laboratory work in physiology with the large classes we usually have in that subject, and perhaps, if we are really honest, most of us will have to confess that we hardly feel prepared to undertake the conduct of real laboratory work.

SUGGESTIVE METHODS

But when we say this we do not say that it is impossible or impracticable for a physiology teacher anywhere, in high school, graded or ungraded school, so to illumine the regular textbook by experiment, illustrations, charts, drawings and diagrams that it can be made attractive and interesting to almost any pupil. In fact, I am inclined to think that although there is less disciplinary value, the pupils learn just as much from observing an experiment performed by the teacher as they would if each pupil were obliged to do it for himself,—and the time spent is much less. To illustrate, take the common test for CO_2 in expired air. Why can not a pupil appreciate the experiment just as well if he sees it as if he does it? It may not be quite so much fun, but lacking that element, why is it not just as satisfactory? And so with many other experiments.

Several text-books, like Colton's *Experimental and Descriptive Physiology* and the Blaisdell books, suggest other experiments to illustrate results of respiration, various things connected with nutrition and digestion, the processes of fermentation and distillation, and the properties of alcohol which make it at once useful in the arts and harmful in our bodies. These experiments are really necessary to a clear understanding of these topics, and may easily be undertaken by a teacher before a roomful of children and all may see and understand. If the children can be interested enough to try these again at home, the value to them will be so much the greater.

One of the features of all laboratory work is that pupils shall make records of all work done; so, when the experiments are performed by the teacher, it is a means of fixing the process and results in the pupil's mind if each writes in a notebook an account of the experiment. They have these notes then for review and reference, and they should be studied, for interest does not always fasten knowledge in the mind although it aids in the apprehension of it.

It seems more difficult to manage the illustrations necessary for the understanding of the structure of tissues and organs. A compound microscope is a great aid, and almost necessary if one is to obtain any correct conception of the cells which compose the tissues, of the striated appearance of muscles, the composition of blood, etc.

The structure of organs like the heart, lungs, stomach, liver, etc., may be illustrated by those taken from lower animals and handled by the teacher. Some object to the introduction of skeletons and other specimens on the ground that they lead to morbid self-consciousness. It

seems to me that objection should be relegated to the past along with the idea that poor health is a mark of distinction and so not altogether undesirable. Few high school boys and girls are as sensitive as the little negro boy who ran away when he saw at school a skeleton and was told he had one inside of him.

There is no possible reason for having the younger children see any of these things, for their time should be occupied with the external features and care of the body, and experience has taught me that while some few in a class of older pupils may express repugnance to the sight of a heart or an eye, interest soon checks this expression of disgust, if the specimen is clean and is handled dexterously. But, as I said before, it is difficult to manage such illustrations before a large class, and it requires considerable skill on the teacher's part to make really profitable such a lesson. The divine art of waiting is one not usually very perfectly acquired by any of us, and boys and girls find it especially hard to sit and wait or do some other work while others are observing, but in order that the lesson may be of any permanent value each child must have an opportunity to see accurately and particularly.

Models and charts are much easier to handle and can be secured without great expense, and those who can not have a microscope for study of minute structures may use photographs of microscopic slides which can be secured and are much better than drawings.

Drawings and pictures are excellent aids in illustration, and the teacher of physiology who possesses the power to draw should consider her talent with thankfulness and make frequent use of it, while the one who "can't draw anything" should set to work to learn how to draw diagrams at least, which I believe any one can do.

We hear a great deal said now about correlation of subjects. There is opportunity for this with physiology. Physics is necessary to understand the application of levers and pulleys to bones and muscles; chemistry and physics, too,

to make clear the changes in blood during respiration and in the digestive processes; geology to show the dangers from cesspools, and conditions necessary for water supply; zoology for comparative anatomy which may be made so interesting when applied to external parts, and may form a part of the physiology work done with the younger children.

IMPORTANCE OF HYGIENE

In addition to our teaching of anatomy and physiology we must not count as secondary that of hygiene, and this is the division of the subject upon which the law rightly lays most stress. The field here is very wide and very important, but I will introduce it by referring to that phase which is particularly mentioned in the law. I think we ought to consider seriously what effect the law and our teaching has had upon the use of narcotics and alcohol.



"When snowdrifts into rivulets slip away,
And bluebirds of the coming violet sing."

[The synopses which follow of the recent investigations by a committee of the New York State Science Teacher's Association, and by the New York State Central Committee on Scientific Temperance Instruction in Public Schools are here omitted, as considerable space was given to this subject in

the JOURNAL for October, 1902.]

If there is time for a discussion of this subject this afternoon, I wish we might express freely our opinions concerning the value of this teaching in our schools. I can speak for the teachers of Malone Village, I think, when I say that our teaching of the effects of tobacco has been of no apparent use, possibly a detriment.

As to the results of the teaching of effects of alcoholic beverages, I remember that once I was optimistic, but when not long since a member of my physiology class presented himself in the class with a strong odor of the vile stuff about him, I "wondered why." Is it the spirit of the town which allows saloons to flourish? (Our "Hill of Knowledge" has at least four saloons at its foot, just where most of our boys must pass in coming to school). Or is it

Courtesy of the Boston & Maine Railroad.

the fault of our teaching? "There are two very important conditions necessary before the best possible results can be secured in temperance teaching, viz.: the intelligence, enthusiasm and moral integrity of the teacher, and the sympathy and co-operation of the community in the midst of which the school is located."

I like to think it is not the fault of our teaching, but have we realized our opportunity, and are we trying to meet it? We ought to be able to do some good. Are we using all our skill to impress the evils of habits of tobacco and alcohol using, or are we doing it in a half-hearted way because we must? I believe this is a question we should each consider honestly with our own consciences, and answer by redoubling our efforts.

But what are we to teach? The Committee of Fifty have just issued a fourth report, on the Physiological Effects of Alcohol. The four combined reports comprise five volumes and these are only "preliminary" in their nature. Let us hope that when they have finished we shall really know something. One thing is sure, we must not teach error. Better let some things go unsaid than to say things that are not so. There are facts which seem to be agreed upon by all: that alcohol hinders growth and development, that its effect upon one individual does not insure that another will be affected similarly, that alcoholic beverages diminish power to resist disease, that in most cases it produces a growing appetite for itself, etc. Certainly we can give reasons from both a physiological and economic standpoint why total abstinence is best.

THE TIME REQUIREMENT

To those who think that undue time is given to this subject if the law is complied with, let me suggest that careful reading will show that we are observing it when we are teaching other hygienic facts.

The care of the body, as of the nails, hair, teeth, eyes, ears, skin; correct positions; right habits of breathing; best kinds of clothing and protection of delicate organs, as throat and ears; change of clothing; ways of taking cold; ways of bathing; ventilation of rooms and houses; protection and guarding against disease germs; purity of water supply; removal of waste; cess-pools and sewer pipes; what to do in case of fainting, drowning, etc., all this can be taught.

The field is very, very wide, and if children do not learn these things at school many will never learn them. What can be more practical? It seems to me that proper appreciation of the necessity of action along these lines would lift many pupils above the stratum where indulgence in alcoholic beverages would be a temp-

tation. You remember how Booker Washington says he first teaches his pupils when they enter Tuskegee to use the toothbrush, and he believes that it is one of the greatest civilizing agents. If in addition to the use of the toothbrush we can secure clean nails, well brushed hair, clean clothing, properly clad feet, will not the boys and girls be started on the road to self-respect? And if the rudiments of proper ideas of sanitation can be instilled, will not our future town and city boards be more diligent in securing for us healthy conditions? When I consider all these things, it seems to me that the time required by the law, 240 lessons, is all too short, and that with anatomy, physiology and hygiene combined, including properly correlated work, there ought to be no difficulty in making the work so varied from beginning to end that it shall never become wearisome from repetition.

This answers in part an important question—How can the subject of physiology be so presented for seven or eight years that each year's work will have a fresh charm, and at the end of the time the pupil will have a practical knowledge of the subject? It would not be in the province of this article to lay down a scheme of work, but if a teacher brings to her work as comprehensive a knowledge of the subject as seems reasonable to expect of one who has so much responsibility, and can apply some of the simplest principles of teaching, there ought to be no great difficulty in preparing such a course of study.

Now I do not feel that I have said anything wise or new, but if this repetition of what must have been in your own thoughts as well as in mine shall arouse us all to a more loyal and devoted feeling toward this work which we must do, and a stronger determination to make it more worthy of honor, the mission of this paper will be fully accomplished.

Read before the Franklin County Teachers' Association, held in Malone, New York, December 5, 1903.

THE PASSING OF WINTER

A gentle warmth is in the air that breathes
Of rarest days, and even to the snow
A kind of tender radiance bequeaths
That seems to speak of life that hides below.

E'en now, the shapes of trees,
Softened in outline, dot the distant leas
Or climb the nearer slopes where visible show
The fair new buds, and everywhere they throw
Shadows more mazy at their feet,
And gayly mock as winter's hosts retreat.

—HARRY W. BUGBEE.



Primary Lessons

FIRST GRADE

CIGARETTES

ONE of the fairest homes in a large city was recently condemned and torn down by the authorities. Wealth and taste had done their best to make it beautiful. There seemed to be nothing lacking. But each successive owner sickened and died within its walls until finally no tenant could be found willing to occupy it.

Examination revealed an unsuspected sewer beneath the foundations, the poisonous fumes from which had so contaminated the whole building as to render it totally unfit to live in.

In the same city and all over the land this story is paralleled in human lives. Young men and youth who have been favored by every circumstance of birth and fortune, and from whom the world has a right to expect corresponding achievement fall before their time, with constitutions broken and faculties weakened.

Cigarettes are directly responsible, in many cases, for this degeneracy, at least in its first stages. There is no chance for health or the development of a vigorous constitution if the child's system is once thoroughly impregnated with this poison. Unless a miracle is to be performed, the life of such an one is over before he has crossed the threshold of manhood. As President Jordan grimly says, "At a time when others are taking up the work of the world, he is concerned with the doctor and the undertaker."

Men grow more and more anxious about ways and means of prevention, as this waste of human life continues and even increases. The most hopeful method yet suggested is that of early education. Ignorance can be dispelled only by knowledge; vice only by virtue. The child must know that cigarettes are hostile to his normal growth, before he can be persuaded to let them alone. He may not do so even then, but he has at least a basis for right action on this plan and one which he can get in no other way.

Even the beginning of school life is not too soon to commence this work of instruction. There will be no cigarette smokers in the grammar school if right habits are formed in the primary grades.

Children instinctively want to be big and strong and able to do the things that grown people do. They are deeply interested, therefore, to find that they can do something to bring about this desired result; to learn that if they eat nourishing food, drink pure water, live much in the sunshine and fresh air, and get plenty of sleep, they will grow faster and become larger than they could hope to do under other conditions.

They can be equally interested to find that there are certain other things which they must take the same pains to leave entirely alone, because such things are

(1)

A HINDRANCE TO GROWTH

At the very outset of school life the child should know that one of the greatest of such hindrances is cigarette smoking. Introduce the subject through the medium of the story, a method that appeals to every child.

THE SPOILED PICTURE

Oscar's father was an artist. He painted many beautiful pictures for people to hang in their homes.

One day when little Oscar was the model for his father's picture, the painter was called out of the room, leaving the child there all alone.

Oscar thought this would be a good chance for him to paint too. He dipped a brush into one of the brightest colors and drew it across the middle of the picture on the easel.*

It left a big blotch. He took another brush, but that did not seem to work any better.

When his father came back, he found Oscar trying to rub out the ugly marks he had made, but they would not come off.

"I wanted to help make the picture," he explained. "I didn't mean to spoil it."

The artist took the little boy in his arms and comforted him.

"Father is sorry about the picture," he said, "but he would much rather have you spoil this one than the picture you are making."

"Mine is nothing but paint and canvass, but yours is a real live boy—it is *you*."

"When you eat a good breakfast, this picture that is yourself grows a little larger and stronger. When you play outdoors in the sunshine and fresh air, you are painting beautiful colors in your cheeks, and making them healthy."

*See illustration, page 108.

"Every one has a chance to make a good picture of himself, but I saw a boy yesterday who was doing something that will be sure to spoil his picture."

"What was it?" asked Oscar.

"He was smoking a cigarette, and I saw a whole package of cigarettes sticking out of his pocket."

"How could cigarettes spoil his picture?" asked Oscar in surprise.

"I'll tell you. In the first place, they had discolored his teeth. Then they had made his skin a kind of dingy yellow color, when it ought to be fresh and rosy-looking."

"He is two or three years older than you are, and he used to be quite a little taller; but since he began to smoke he has almost stopped growing, and I am afraid now that he will never be a large man."

"Instead of standing up straight and tall as a boy should stand, he was leaning against a post when I saw him yesterday and letting that hold him up. Cigarettes have made him lazy."

"They can do something even worse than all this. They can make any boy who smokes them a bad boy. You can see now why father hopes you will never spoil the picture you are making by having anything to do with such things."

"I never will," said Oscar.

LESSON TALK

Ask all the children to rise and let you see which is the tallest. Have a tape measure or yard stick ready, and find the exact height of three or four of those who are taller than the rest.

Why do we all want to be tall? What are some of the things that children can do to make themselves grow faster and larger?

Write the words food, pure air, sunshine, exercise, sleep, etc., on the blackboard, as each of these aids to health and growth is named by the children, at their own initiative as far as possible.

What have you had to eat today that will help to make you grow? If an unwholesome food is named, or one that is unsuitable for children, suggest something better to take its place next time.

Where do we get the pure air that we all need to make us grow? How can it get into our rooms at home?

How long have you been out in the sunshine today? Name something else that needs sunshine to make it grow, besides children.

Why do children need plenty of sleep? What time do you go to bed at night? How many get at least ten hours of sleep? Who will be the first to go to bed tonight and the first to get up in the morning?

What is each one of you helping to make that is better than any painted picture?

How do cigarettes spoil these living pictures of ours? Why must we let cigarettes ~~and every~~ other kind of tobacco entirely alone if we want to be tall and strong?

(2)

AN INJURY TO HEALTH

The boy who has just smoked his first cigarette knows better than any one can tell him how terribly sick it can make the user. But he does not usually know that the harmful effects of tobacco upon health persist and increase long after he has so accustomed his stomach to the poison that he can perhaps smoke without feeling any discomfort at the time.

Children must be taught how and why cigarettes are responsible for such mischief. Such facts will furnish additional reasons for them to refuse to begin the use of so harmful a substance.

Introduce this topic by showing the picture reproduced on page 105, and telling the story of

DR. FRANK'S PATIENT

Did your pet doll ever get sick enough to have the doctor?

Ruth felt sure something serious was the matter with her Rosibel, so she sent for Dr. Frank to come as quickly as he could and prescribe for her.

If you had seen Dr. Frank that morning when he was out with his sled, you might have thought he was only a little boy, but when he came in to see his patient, dressed up in tall hat and spectacles, and carrying a cane and a really truly medicine case, nobody could think of calling him anything but Dr. Frank.

He felt Rosibel's pulse, and looked at his watch just as he had seen his father do, while Mamma Ruth watched him anxiously.

"If your child was a boy I should fink he had a 'bacco heart," he said, finally. "But he's a girl, so it must be gen'ral 'disposition."

"Oh, Doctor, will he get well?" asked the worried little mother.

"Don't be 'larmed, madam, I'll give her some pills that'll cure her right off, but you must put her to bed and keep her warm," said Dr. Frank.

"What do you know about tobacco heart?" asked Aunt Sue who was passing through the room.

"Why it's what boys get when they smoke cigarettes. My papa had a case yesterday and I went with him to help prescribe."

"But why did you say you would think Rosabel had it if she were a boy?"

"'Cause she looked just like that boy, all pale and weak, and her heart beat too fast. But 'twasn't 'bacco heart, 'cause girls don't smoke."

"Aren't you going to learn to smoke when you are a little bigger? Most boys do."

"No, indeed, I'm not. I wan't to be a real doctor like father when I'm grown up, so I have to keep well now."

"Father says cigarettes hurt your heart and stomach and make you breathe dirty air. They make your hands tremble too. He says no boy can smoke cigarettes and keep well, and I guess he knows 'cause he's the best doctor in town."

"I'm going to be his partner when I grow up, and cure real people. I can cure all the dolls now."

"Yes, indeed, he can," put in Ruth. "Rosibel's all well this minute, and I've just told her she can get up."

LESSON TALK

How many of you have dolls at home?

Do they ever get sick? If they de, I hope they have as good a doctor as Rosibel had.

What was the matter with the boy that Dr. Frank and his father went to visit?

Put your hand on your heart. Hear it tick, tick, tick, like a good watch.

If a boy gets to smoking cigarettes, very often he finds that his heart does not tick the way it used to do.

It acts like a watch that does not keep good time. How do we want our hearts to tick?

How does tobacco smoke hurt the air we breathe? What may happen to a boy's hands if he gets into the habit of smoking?

Dr. Frank knew he could not smoke when he was a boy if he wanted to be a good doctor like his father, so he let it entirely alone.

We must do the same, because boys who smoke cigarettes when they are little almost never grow up to be strong, healthy men.

AUTHORITATIVE QUOTATIONS

A DESTROYER OF HEALTH.

If you wish to develop a strong body and a

pure mind, you must keep this deadly destroyer entirely out of the temple [of the body]. If you smoke cigarettes or chew tobacco, you will be stunted in growth, weakened in lung power, weakened in muscle power, weakened in heart power. You can not make the temple beautiful. Your skin will be sallow, and your expression faded. You can not keep up with your classes. You can not remember well. You will lose all interest in high ideals, in truth and nobility.—F. M. ROSSITER, M. D. in the *Story of a Living Temple*.

A GREAT OBSTACLE TO PROGRESS

Physically, mentally, morally, and industrially,

schoolboys will be ruined unless the cigarette habit, which prevails amongst them is broken up. It is one of the worst obstacles in the way of progress in our schools. The pipe is simply the next step after the cigarette habit.

This evil must be fought, and I contend that it is for the welfare of the citizens generally that they take a hand. Fathers and mothers and teachers must exercise all possible care to prevent it.

I am informed that boys as young as seven years begin to smoke. If we neglect them at that age they will be ruined for life. If a boy begins before he is ten years old, he will never be able to graduate from a high school.

This is due to the fact

that smoking at that age makes his brain dull, and being inactive he is unable to study the required branches properly in the advanced schools.

Cigarette smoking causes a craving for liquor in a majority of cases. Boy smokers do not realize the injurious effects of the cigarettes. In many cases consumption finally claims the victim.

A cigarette smoker's chances in life are slim, especially when he begins young. Many reputable firms will not employ a cigarette smoker, and I could not conscientiously recommend a man for any position who smokes cigarettes.—C. E. STEVENS, Supt. of Schools, Stoneham, Mass.



"Oscar thought this would be a good chance for him to paint."

ALCOHOL AS A FOOD AGAIN

THE value of alcohol as a food can be efficiently tested only by extensive observation. Its determination in a purely academic sense is of no practical value or of special interest. It does not follow that, because it may be assimilated and may become a source of energy in the system, that it is a desirable or a useful article of diet. When we get down to hard business facts, such, for example, as the experience of life-insurance companies we have a better standard by which to judge.

In the *British Medical Journal* of January 16, is an abstract of a paper read at the meeting of the British Institute of Actuaries on the comparative mortality of abstainers and non-abstainers, based on the experience of the United Kingdom Temperance and General Provident Institution during the last sixty years. This insurance company takes both classes with the same premiums, but keeps separate records. The mortality experience of each grade separately is ascertained carefully, the former receiving no advantage arising from their superior vitality except in the form of additional bonus.

The special feature of the case, as the *British Medical Journal* shows editorially, is that the abstainers show an advantage which is from 25 to 45 per cent superior to that of the non-abstainers between the years of 25 and 65, that is, in the active and valuable years of life.

The comparability of the two sections is thoroughly discussed. The average amount of insurance in each class is about the same. There has been no special selection of lives in the abstainer's class, and there is no question in case of their taking liquor under the prescription of a physician. The pecuniary conditions and methods of living other than the drinking habits are alike. The members of the two classes are dealt with on absolutely equal terms, and the superiority of the life experience of the abstainers has not been obtained, as shown by careful statistics, by any preferences between the two classes.

Our British contemporary, which, as far as we know, is not prejudiced in favor of total abstinence, says that the study of statistics fails to reveal any other cause for the condition than the abstinence from alcoholic drinks, and that, in the light of this experience, abstinence must be considered as an important factor in securing health and long life. Such facts are far more significant and important in establishing what is the dietetic value of alcohol as commonly used, than is any amount of laboratory experimentation. They, moreover, agree with other experience from a medical and economic point of

view. Therefore, total abstinence from alcohol seems to be decidedly the best policy for any one who wishes to live long and to avoid any unnecessary risk to health and life.—Editorial in *Journal of the American Medical Association*, February 20, 1904, pp. 539, 540.

SCIENTIFIC TEMPERANCE IN JAPAN

THE island kingdom of the orient is astonishing the world by the rapidity with which it is adopting the best features of western civilization. Education, in particular, is already so far advanced that it is estimated that less than ten per cent. of the population are unable to read and write. In this connection it is gratifying to know that instruction in scientific temperance is likewise spreading through the schools from the kindergarten to the college, promising much for the sobriety of the Japanese of the future. A recent letter from the world missionary of the Woman's Christian Temperance Union in that country, Miss Kara G. Smart, gives an interesting glimpse at some phases of this work. She writes:

Dear Mrs. Hunt:

I am sending you in this mail a copy of the translated text-book, "Health for Little Folks," which was translated entire and which is still popular. Enough copies have already been sold to make good the expense of getting it out.

I am also sending you three of the new leaflets which have been gotten out in the last few months for use in your department. "*Arsenic in Beer*," and "*The Twentieth Century's Medical Study Concerning Alcohol*" are both translations of leaflets we use at home, while the one "*Sake is a Poison*," was written for the work by Mr. Ando. I thought that you might wish to have these on file in your department for reference in the future.

I think you will also be interested in learning that during the three months spent in the northern part of Japan, I had the unusual opportunity of addressing the students of thirty-seven government schools on Scientific Temperance, besides some of the mission schools and other audiences. In the government schools alone we reached nearly 13,000 students in grades ranging from the kindergarten to the highest schools and colleges, those ranking next to the Imperial University at Tokyo. The result has been a wonderful awakening all over that part of the Empire, and many of the principals of the schools are applying to the Educational Department of the government to be given funds wherewith to supply themselves,

with the needed charts and other helps for the proper teaching of this subject.

Five different Mayors of cities and Governors of provinces paid me special honor, and thanked me most heartily for the work I was doing and for the message I brought them.

I am now planning to carry out a similar campaign in the southern and central parts of the Empire, from which I have already received numerous invitations, and as soon as this is completed, we shall begin active operations in the direction of the Educational Department to secure if possible the desired law. The outlook at this writing is very hopeful.

Cordially yours,

(Signed) KARA G. SMART.

No. 30 Tsukiji, Tokyo, Japan.

FORWARD MOVEMENTS IN FRANCE

OUR readers will remember that some months ago reference was made in these columns to the posting of placards in France last year showing the dangers of alcoholic drinks. The following extracts which we are permitted to copy from a private letter from Pasteur R. Sailleus of Paris, gives an interesting account from the inside of the progress of the temperance movement in that country.

The editor saw posted on walls and in public buildings in Paris last summer the placards referred to, and in a personal interview at the office of M. Mesureur received a set of the posters which appeared from time to time, some serious, some humorous, as was to be expected in Paris where "gaiety ever has her due." Two of the most important posters have been translated into English and reprinted in a form as nearly as possible like the originals.

The letter mentioned above says:

"A bill was posted all over Paris a few months ago as an official warning given to the people by the city authorities. In France, no private individual is allowed to use white paper

for posters; the white is reserved for official communications from the state or from the municipal authorities. A white bill is therefore always connected with the idea of a law and has great weight with the people. The bill containing the judgment passed upon alcohol by the Academy of Medicine and giving the names of the two prominent physicians who wrote that judgment,—a most radical one, including even wine, beer, and cider among the dangerous articles—was issued by M. Mesureur, Director of the Paris Public Assistant Service; a service which includes the administration of all hospitals, asylums, etc. He signed it together with the Préfet de la Seine, M. de Selves. The préfet with us is something like the state governor with you, the highest official for Paris and the Department of la Seine.

The names of the two physicians which also appear on the document are Prof. Debove, dean of the Faculty of Medicine, and Dr. Faisans, Physician of L'Hotel Dieu, the largest hospital.

A score of other physicians of repute might easily have been found willing to sign. That poster is on all the walls of Paris permanently, in all schools, hospitals, police stations, postoffices, and other public buildings. It has greatly disturbed the spirits merchants, and they tried to intimidate the authorities who signed it by threat-

ening to enter a legal action against them, but defeat was so evident that they did not attempt it.

"The temperance congress which has just been held in Paris has shown that the temperance cause is making great progress throughout France. The consumption of alcohol is at a standstill; it has ceased to increase, though there is still no perceptible decrease. The government is fostering temperance reading in all the public schools, and it is not uncommon now to see people in restaurants, etc., drinking solely non-intoxicating beverages. The Blue Cross now numbers 4000 members, and many are with us in this cause who do not share our faith."



"He felt Rosibel's pulse and looked at his watch, while Mamma Ruth watched him anxiously."



Grammar Lessons

FOURTH YEAR

THE SPECIAL SENSES

RECENT study of sense-perception in certain barbarian races tends to overthrow the long accepted notion that savages really have acuter senses than civilized people.

All the tests made go to show that there is little if any difference between the eyes, the ears, and the other sense organs of these children of the forest and those of boys and girls in cultured communities. The extraordinary sense acuteness of Indians and other savages often mentioned by travelers can thus be due only to the better training which they give to these organs or to their greater powers of attention.

An Eskimo lad will sit motionless for hours at a time beside a hole in the ice waiting for a seal to appear, while an American boy of the same age is often unable to fix his mind on any one thing for five minutes at a time.

One of the great demands of the business world is for people who know how to learn, how to apply themselves to whatever task is given them until it is completely mastered. Sense training in the schools should aim to meet this requirement, by helping the child to use all his senses more quickly and accurately, and by requiring him to concentrate his powers of attention upon the thing in hand, whether this be study or play or work. This is the time and place, also, to explain that the use of alcoholic drinks, and cigarettes or any other form of tobacco is directly opposed to accuracy of the senses or to concentration of mind, and consequently to any kind of success.

A certain amount of physiology will be necessary as a basis for this work, but only enough to make the care and training of the sense organs intelligible to the child. All minute and intricate study of the structure of these organs should be left for the advanced work of the high school and the medical college.

THE WORK THEY DO

Perform some act, such as placing a picture

on the table. Ask the class to tell what was done. How did they find out?

Have them all close their eyes and turn their backs to you. Then request some one to rise. When he has done so, ask how he knew that the request was made.

While all or a part of the class rise and stand with eyes closed and arms behind them, put some small article into the hands of each. Let them describe and name it, then tell how they found out what it was, when they could not see it.

How can a blind man tell what he is eating? How could he tell if there were roses in the room?

Ask one member of the class to name ten things in the room that he recognizes by the sense of sight. Call on others to name objects that they recognize by each of the other senses.

What senses does one use in playing football? in riding a bicycle? in skating? What are some of the things that we should know nothing about if we had not the sense of sight? the sense of hearing? of taste? of smell? of touch?

How has each of these senses helped you today? Name five things that you have done by the help of your eyes since you got up this morning that you could not have done without them. Name five ways in which each of your other senses has been of special use since yesterday.

These exercises may easily be expanded if time allows. At all events, they should be continued until all the children realize that everything they know, and every game they enjoy comes to them only through one or more of these little sense-helpers.

THE TRAINING THEY NEED

All work in the schoolroom should have as one of its objects the better development of the senses, but special exercises for this purpose are also valuable. As one such exercise, tell the class to imagine themselves in a strict business office where only those who pay close attention are wanted.

Then hold each pupil responsible for hearing everything that is said, for seeing everything that belongs to his own work, and for using each of his other senses as far as it can be of present use to him. Write on the board at the close of the day the names of those who have not made a single failure in this work, telling them they would be the first to be promoted if they were really in a business office.

Another day, take the class into some other room, if one is vacant, or send them outdoors for five minutes. On their return, have them write down on slips of paper the different things they have seen or otherwise found out in that time.

Ask each one to select a certain time during the day to notice how many different sounds he can distinguish both in and out of doors.

Read aloud a short story, and have the class reproduce it at once. Read another, and have the reproduction take place several hours afterward, or even the next day, thus testing the memory as well as the hearing.

Pictures offer a wide field for sense-training. Show the class Millet's *Angelus*, asking them to describe what they see. Which of the senses do they use in doing this? Which are the man and woman in the picture using? How does one know that they are listening to something? What do you think it is?

Make similar use of other pictures as occasion offers, both to cultivate the art of seeing truly, and to help the children to grasp the idea that the artist has tried to convey.

THE CARE THEY SHOULD RECEIVE

It is important for children to know early in life that people alone of all living creatures can make the brain help the senses.

For instance, a man can not see so far as a hawk with his naked eye, but with the help of his brain he can make a telescope that will help him to see infinitely farther.

He can not hear at such distances, as a deer or a rabbit, but he can make a telephone through which he can hear what is being said a thousand miles away.

In the same way, a person's sense of taste or smell is not so acute as that of many animals, but in every case these senses are more useful to him and the source of more pleasure than any animal's can be.

For this reason, if for no other, we should take good care of these five helpers, that they may do ever better work for us. They are far too valuable to be neglected or misused.

Help the children to find under what conditions each sense can best do its work; how the light should fall on one's book or paper, for instance; how and when each sense should get

the rest it needs, and also enough exercise; and why one should take care to have each of his senses send only such messages to the brain as he will wish to have recorded there and remembered.

After class talk and textbook study on these points, ask each pupil to play he is a doctor and the rest of the class are his patients for whom he is to prescribe a list of health rules as to the care of the senses.

Have them write these rules in two columns, putting in the first what one should do, and in the second what one should not do in order to make his senses strong and helpful.

In the second column will be found, of course, many of the reasons why one should not use tobacco or any form of alcoholic drink. Take care that such reasons are not given arbitrarily,

because the book says so, for instance, but because, after full discussion of the subject, each child clearly understands the harm that each has already done the senses in the case of thousands of people, and wishes to put himself on the safe side of total abstinence.

AUTHORITATIVE QUOTATIONS

Professor
Kraepelin's
Heidelberg

experiments, extending over several months, indicate the following general conclusions as to the effect of alcohol on the senses:

Sight was diminished to the extent of from ten to twelve feet. The color sense was disturbed. Forms and shapes were blurred and indistinct, except when seen very near.

The senses of hearing and of touch were also diminished, and the sensation of taste was changed.—T. D. Crothers, M. D.

"The 'tobacco heart' and its almost invariable concomitant, the 'cigarette eye,' are becoming alarmingly prevalent diseases. Could we expect anything less when 20 per cent of our school boys learn to smoke the fatal cigarette before they are fourteen years old."



"They heard the convent bell
Suddenly in the silence ringing for the service of noonday."

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"Behind the gust and the ragged cloud
And the sound of loosening floods,
I see young May with her fair head bowed,
Walking in a world of buds."

EDUCATION A NATIONAL SAFEGUARD

"**E**DUCATION and Christian principles are the noblest heritage we can leave our children" was an often repeated phrase, we, my two sisters, my brother, and myself, heard from the lips of our parents; hence, we grew up with the idea that knowledge with God's blessing on our purpose to do right would steer us into successful paths in life.

Ideas of this sort that can be traced directly back to Puritan ancestors account for what is called the educational spirit in the United States, where, Mr. Alfred Mosely says, "instruction is felt to be every child's right." Americans believe in education, and turn to it as a safeguard for the development of good citizenship as well as for prevention of the growth of wrong tendencies. Thus we have universal compulsory temperance education in our public schools. The article on the study of temperance physiology published in this issue of the JOURNAL is interesting not only for its helpful suggestions to teachers from one of their number, but because it shows that the teachers of the Empire State are beginning to think and reason about this branch of their work.

THE AIM OF MODERN PHYSIOLOGY AND HYGIENE

Training the mind has heretofore been the object of the school, but a broader intelligence is coming to see that the question how to treat the body to make it the strong, efficient servant of an intelligent will is also a question that must be rightly answered by a nation that desires to perpetuate a vigorous, achieving race. The study of modern physiology and hygiene aims to meet this need.

In this modern physiology and hygiene is included the presentation of warning instruction

against usages and habits, like those of alcoholic drinks and other narcotics, that modern science as well as experience has shown to be a menace to individual and national life. The boys of today who are being ruined by the cigarette are mostly sons of men whom the schools did not teach in childhood that tobacco is harmful to the development of the individual and the race.

KNOWLEDGE AN APPEAL TO SELF-PRESERVATION

Knowledge, by revealing the disastrous consequences resulting from breaking natural law, appeals to the strongest instinct in human nature, self-preservation, and thus presents a motive for right action. The ignorance of the father that nicotine is a narcotic poison to cell-life will not prevent the child of the smoker from inheriting the consequences of poisoned paternal cells. Added to this inheritance is the atmosphere of the homes of many children. From babyhood this is often saturated with the fumes of the father's pipe, and easily affects the tissues of the child already rendered susceptible because of their prenatal tendency toward tobacco. This is the unfortunate patrimony of many of the boys whom the public school teachers of today are required to teach the nature and effects of narcotics.

Is the teacher given an impossible task in the case of such boys? No, indeed. The recoverableness of human nature under right instruction is evidence of our divine origin, and of the possibility of return to our Creator's image in whose likeness we are made. The wrong bent of the young plant may be corrected if the gardener begins early and patiently continues a shaping care through the period of its immaturity, but not if he waits until its fiber has become fixed.

In view of the heredity and environment of all too many boys, warning instruction against tobacco in all forms should begin as soon as the child enters school. He is most impressionable then and rarely has formed the cigarette habit. Much is said in pedagogical circles now about waiting for the psychological hour. The skilful primary teacher can evoke that hour by a story or incident that will prepare the child for the truth she intends to impress. This truth and the plan for its illustration the teacher should have in mind on beginning the lesson.

Not much can be done by scolding or preaching with average boys, especially those who have prepossessions toward tobacco; but loving, tactful *teaching* will save the majority, if it begins with the first school year and is skilfully continued through the years until the subject is covered in the first year of the high school.

MONOTONOUS REPETITION UNNECESSARY

But will not this mean monotonous repeti-

tion? No. Physiology and hygiene is a progressive subject comprising enough truths to keep the study ever fresh and impressive as the pupil learns each year more of his wonderful body and thus better understands the physiological reasons for keeping it free from all narcotic poisons. When our teachers become as familiar with the facts of this science as they already are with those of mathematics, and learn how to adapt these facts to each successive grade, their difficulties will vanish.

When teaching against tobacco has been of no apparent use, it will ordinarily be found to have been delayed until the boy has begun to smoke; or to have been given in a half-hearted, uncertain manner; or to have been nullified by the example of a smoking principal or superintendent. In other cases a bad text book may be at fault, one that condoned tobacco using.

What is now needed is carefully prepared courses of study showing what facts should be taught each year. Many of these facts can be found in a well-graded series of text-books, like the *New Century*

Series of Physiology and Hygiene. Begin with the *Oral Lesson Book*, for the three grades of primary teachers. Next take the *Primer* as one source of information for fourth year pupils' use; then the *Intermediate* book for the fifth and sixth years. Follow this with the *Elementary* text-book for seventh and eighth years, and the *High School* book.

In connection with this study of facts to be learned we must study the child, his ability to comprehend and practically apply these progressive truths from his first day in school to the close of his study of the subject at the end of his first year in the high school. In this we must remember the large numbers of children who leave school at the end of the fourth, fifth, and sixth years to become bread-winners. Our course of study must provide that not one physiological reason for obeying the laws of health,

including those that teach abstinence from alcoholic drinks and other narcotics, that such children can comprehend shall be left out of their lessons during the years they are in school.

NO REASON FOR DISCOURAGEMENT

Temperance physiology or something else must have prevented many boys who pass four saloons on their way to school from buying liquor, if only one under such circumstances presented himself in class with the odor of the vile stuff about him. No teacher would say language lessons are useless because one boy fails in his English. Much good is being done even with the present imperfect teaching. If under the above conditions, in a state where all must study physiology, the saloon captures only one boy in every thirty or forty, the time will come when the uncaptured boys, having reached

their majority, and knowing that alcohol is a poison ever at war with human welfare, will vote to banish that symbol of barbaric ignorance, the saloon, forever from civilized society. Such teachers are doing



"The thatch toned by successive seasons to a harmonious blending of wood colors."

good work. Time is a factor in this battle. Be not discouraged. Greater good will follow when the best constructive effort of the teachers is devoted to finding methods of most effectively teaching this branch.

THE COMMITTEE OF FIFTY FOUND WANTING

The hope has been widely expressed that when the Committee of Fifty have finished their work we shall really know something about the nature and effects of alcohol. But their last report, concerning this teaching in the public schools, has succeeded only in raising doubt which expert investigation dispels. The *Reply to the Physiological Sub-Committee* shows that they have failed to prove the indorsed text books inaccurate, and that their suggestions in favor of moderate drinking will not stand the test of modern scientific investigation.

"See 'A Visit to a German Farmhouse' page 97.

A VISIT TO A GERMAN FARMHOUSE

SPRING in Germany brings a succession of her choicest gifts. The slopes in the Bremen parks dotted with wind anemones that are like so many fairies dancing on the green, tulips at Berlin, pansies of every hue in the Sanssouci Palace Park at Potsdam, Gothic cathedral spires of the horsechestnut, masses of purple and white lilacs the beauty of which makes one wonder why, in America, we have relegated the lilac, for the most part, to neglected corners in back yards, hundreds of acres of rape like fields of the Cloth of Gold, the common fruit trees, and finally, pink English thorn, rhododendrons, and Italian azaleas, all in their turn bring new delight, partly, perhaps, because in the midst of strange surroundings one recognizes most of them as dear familiar friends.

The aspect of the farmhouses, set in the midst of much of this spring luxuriance, is less familiar, but interesting without and within.

Most of them are of one story and are built of brick with thatched roofs. The thatch is skilfully renewed a little at a time, year by year, and becomes toned by successive seasons to a soft harmonious blending of wood colors that seem almost like a part of the natural landscape.

Occasionally, one may see on the roof of one of these houses a stork, lately arrived from the winter's sojourn in Egypt, perched on or near the great ungainly nest that resembles a much pulled over bushel basket of straw. Viewed from a distance, the stork, as it stands on one foot, seems suspended in mid air. The coming of a stork is always heartily welcomed by the peasants who think it brings good luck, and who are greatly troubled and grieved if anything happens to drive the bird away.

Another relic, possibly of the superstitions of old Saxon days, survives in the crude figures of horses' heads, originally, perhaps, symbols of some superhuman power, which are carved at the end of boards crossed at the front gable of the houses.*

These are the houses which the cattle enter at the front door, while the rear windows are graced by the family lace curtains.

Picking our way through the mud of the front yard, we entered the stable. At the left, were such farm implements as were not out doors. At the right, was a row of twenty or more sleek cattle who seemed to watch the visitors with mild-eyed interest as we passed on to the door opening from the stable into a tiny kitchen.

The smiling housewife and her bright faced, flaxen haired little daughter, making the proper *knix*, and with the gracious "*bitte schön*" which in Germany signifies cordial acquiescence to

every act from buying a penny cake to interviewing a government official, willingly displayed all their domestic arrangements.

There was the little table, and over it a cupboard containing the family dishes, a churn, a sink, and, most conspicuous and interesting of all, a crude open hearth about three feet high, built of brick, and having four small kettle holes in the top. At the top of the room over the hearth was a simple hood designed, probably, to draw away the smoke. An iron tea-kettle was suspended by a chain from the hood over one of the holes of the hearth, where a few tiny green sticks about the size of one's finger made a feeble effort to burn, but the prospect of getting boiling water seemed very remote.

The hearth has no oven, as the baking is all done in a little white bakehouse outside, some forty feet away from the main buildings. Evidently the saving of steps for the *hausfrau* was a minor consideration.

As we stood in the doorway between the kitchen and stable, our attention was called to something suspended from the beams of the latter, and the interesting fact developed that when there are hams to be smoked, they are hung in the kitchen at night; the latter is tightly closed, a smoking fire left on the hearth, and thus through successive nights the hams are cured. When finished, they are hung in the stable awaiting use by the family or purchase by the city people. Somehow, thereafter, German ham was even less attractive than ever.

Behind the kitchen and another tiny room in its rear, also opening out of the stable, were the lace curtain rooms, fairly large and comfortable, furnished for the most part in a fashion not unfamiliar to us, but occupied in this instance by city boarders who had come out for the summer thinking the farmhouse air very healthful. The farmer's family, we were told, often occupy the whitewashed stable in summer after the cattle have gone out to pasture.

The drive back to the city took us past many of these quaint, picturesque farmhouses. Far out in the fields, in the fading afternoon light, men and boys, women and girls were busily preparing the soil and sowing seed; for the season's work had begun, and German thrift, which showed itself on every side, was pressing every pair of hands into service.

The next morning, whatever might be the weather, would find many women early established in the city market place, their hand carts, which perhaps the huge black dog had helped them draw into the city, piled high with plants and flowers. The weather might compel them to sit under umbrellas, but their round faces were in themselves suns of enjoyment, as the women would not lose for any such trifling

*See illustration on page 100

consideration as bad weather, this daily opportunity for an hour's interchange of gossip and the sharing of the life of the city, neither of which need be neglected while attending to the main business in hand.

One could watch these women with the kindly interest that always surrounds unfamiliar habits in a foreign land, without the pain felt in other parts of Germany at the sight of women's faces on which was written little of the joy of life, but which were lined with the intensity of the evident struggle to provide for daily needs.

CORA FRANCES STODDARD.

THE SAFEGUARD OF EDUCATION

If the conscience and understanding of the people are enlightened, they can be depended upon to choose the right, and therefore can be trusted to

govern themselves. This is the fundamental idea upon which our free institutions rest. If, when the people are taught the mental, moral, and physical truths that are essential to the well-being of society,

a majority, in the face of such instruction should persistently choose the wrong, this republic would perish, for no individual or nation can survive a perpetual course of wrong action. Vice kills its votaries.

But we are safe if we guard our churches and schools, for out of every one hundred human beings, who have had right education from early childhood those who go wrong will be the exception and not the rule. Experience has shown that the majority will choose the right that is essential to good citizenship. Therefore the perpetuity of the republic is assured. Our free schools and our churches with their religious liberty teaching the right, together with the homes born of such teaching, are the corner stones of this republic.

"Then to side with Truth is noble when we share her wretched crust,

Ere her cause bring fame and profit, and 'tis prosperous to be just;
Then it is the brave man chooses, while the coward stands aside,
Doubting in his abject spirit, till his Lord is crucified,
And the multitude make virtue of the faith they had denied."

WHAT IS IT THAT MAKES BOYS BAD

The cigarette, if not a cause, is at least the mean accessory of half the mischief of the street. And I am not sure it is not a cause, too. It is an inexorable creditor that has goaded many a boy to stealing; for cigarettes cost money, and they do not encourage industry. Of course there is a law against the cigarette, or rather against the boy smoking it who is

not old enough to work — there is law in plenty, usually, if that would only make people good. It doesn't in the matter of the cigarette. It helps make the boy bad by adding the relish of law-breaking to his enjoyment



German farmhouse, showing a stork and its nest on the roof.

of the smoke. Nobody stops him.—JACOB A. RUIS.

"Count me o'er earth's chosen heroes,—they were souls that stood alone,
While the men they agonized for hurled the contumelious stone,
Stood serene, and down the future saw the golden beam incline
To the side of perfect justice, mastered by their faith divine.
By one man's plain truth to manhood and to God's supreme design."

"A skeleton," said a little tot in school, twisting her apron in her fingers, "is a man who has his insides outside and his outsides off."—*Denver Times*.

BOOK NOTICES

BACTERIA, YEASTS, & MOLDS IN THE HOME, by H. W. Conn, Professor of Biology in Wesleyan University, Middletown, Conn. List price, \$1.00. Ginn & Company, Boston.

In this modest volume, the busy housewife with little knowledge of household economics will find the key to many puzzling questions. It treats of the threefold role played by micro-organisms in their relation to the home,—first that of producing the decay and spoiling of foods, second their value in the preparation of foods, and third their work in causing contagious diseases. In each case, the origin of the most common forms of bacteria, yeasts, and molds is first presented, then their methods of work, the results thus produced, and, finally, in the case of harmful germs, the best methods of prevention.

The chapter on alcoholic fermentation is particularly clear in statement. After reading it, no housekeeper can offer the timeworn excuse that her homemade wines and beers contain no alcohol, because she made them herself and put no alcohol into the making. The practical suggestions as to prevention of contagious diseases, the disposal of dust, the exclusion of flies and insects from the home on sanitary grounds, and the relation of sewage to common water supplies are timely and full of value. The author is to be congratulated on the readableness of his book and its freedom from technical expressions, which thus brings it easily within the comprehension of the ordinary reader.

TUSKEGEE NORMAL AND INDUSTRIAL INSTITUTE

One of the best testimonials as to the value of the work done in the Tuskegee schools is the statement of Principal Washington, in his twenty-second annual report, that not a single one of the graduates of the school has ever been convicted of crime or sent to the penitentiary, basing his statement on carefully kept statistics. It is doubtful if many schools of like size for white students can boast of an equally good record. No better vindication of the principles of industrial education as a solution for the negro problem can be asked. As Mr. Washington well says, special stress is laid upon hand training in these schools for the negro, not because of the color of his skin, but because it is the most valuable form of training for any people in the same stage of racial development as are the masses of the negroes.

MISTRESS MARCH

BY HILTON R. GREER

You're a crabbed crone and crusty,
Mistress March!
Vibrant is your voice and gusty,
As you sweep down highways dusty,
Swaying with abandon lusty
Brittle boughs of oak and larch;
Yet we hail you herald trusty,
Mistress March!

For, despite your storm and stinging,
Mistress March,
Hints you bear of buds upspringing,
Silver sounds of wild birds singing,
Flash of swallows, fleetly winging
Where the blue skies overarch.
Bless you for your message-bringing,
Mistress March!

—In March *Lippincott's Magazine*.

HER PRAYER

Gladys had lost two front teeth. She had been told that God would give her some new ones. She was to take part in the Easter exercises at Sunday-school. In spite of all wishing, however, the teeth refused to put in an appearance, and Easter was at hand.

One night Gladys's mother heard her talking after she had put her to bed. She went back and saw her kneeling beside her bed in the moonlight.

"O God," she was saying, "if you haven't got my new teeth done, won't you please drop my old ones down again till after Easter?"

—*Literary Digest*.

EFFORT INCREASES EFFICIENCY

The squirrel's teeth become useless through lack of use. His hind leg gains strength and size from exercise. This seems to be nature's plan. All growth, mental, moral, physical, seems to come through effort. Man's foot will not grow swifter because he rides; his eyes will not gain power because he wears glasses. His hand does not gain in skill or strength because he uses tools. Intense desire causes effort. Effort increases efficiency of the organ. No struggle, no growth! Read Drummond's *Ascent of Man*, page 102.—*Moderator-Topics*.

PHYSIOLOGY TOPICS FOR APRIL

PRIMARY—External Needs of the Body: Clothing, Shelter. The Sense of Touch. The Skin and Cleanliness. Work of the Brain and Nerves.

INTERMEDIATE—Alcoholic Drinks and Tobacco. Bones. Excretion.

ADVANCED—Fermentation. Bones. The Nervous System.

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BOSTON, APRIL, 1904

No. 8

HARBINGERS OF SUMMER

BY ISABELLE BUKER CHASE

ROBIN in the maple tree,
Swallow 'neath the eaves,
Bob-o-link in meadow grass,
Sparrow 'mid the leaves;
Sing your fullest,
Skim your swiftest;
Trill and chatter,
Chirp and play,
Tell the glad news summer's coming,
Though so long time on the way.

Brooklet flowing through the woodlands,
River running to the sea,
Stream where spotted trout are glancing,
Waterfall so full of glee:
Flow and ripple,
Gleam and glitter,
Roll and tumble
Bright and gay,
Harbingers of summer's coming
Though so long upon the way.

TEMPERANCE

BY PROFESSOR JAMES KIRK

Professor of Pedagogy and School Law, Southern Illinois Normal University, Carbondale, Illinois.

TEMPERANCE may be defined as the moderate use of things helpful and the avoidance of (total abstinence from) things harmful. Of course, this leaves individual judgment to decide what things are injurious and what things are beneficial; and this is the field for education. *Is it not true that some things which are harmful to one are helpful to another? Is it not equally true that some things are injurious to every one? Every pupil should be led to judge for himself and to know what things he may use and what he should avoid. He will not need to try everything. Poisons are destructive to all, and though they may be more dangerous to some than to others, the prudent person will not only refuse to use them, but he will avoid the means of temptation. The wise person does not needlessly risk danger, he prefers the course that all admit to be safe.

It is sometimes said that total abstinence is not temperance; that everything is good; and that one must use it in moderation in order to be temperate. When a lady of great hospitality who served brandy at dinner urged her

guest, a good bishop, to drink, saying that everything is good in its place, he replied that she had spoken the truth, and that, with her permission, he would put the brandy into its place from which he hoped she would never remove it. Permission being given, he put the decanter into a corner of the cupboard saying that in his judgment the table was not the proper place for it.

Possibly the apology for free indulgence is given in its most insinuating form in Milton's *Comus*. The vile enchanter, whose followers appeared like well-dressed men and women with the hideous heads of wild beasts, says:

"If all the world
Should in a fit of temperance feed on pulse,
Drink the clear stream, and nothing wear but frieze,
The All-Giver would be unthanked, would be unpraised;
Not half his riches known, and yet despised;
And we should serve him as a grudging master,
As a penurious niggard of his wealth;
And live like Nature's outcasts, not her sons."

But the reply is, that Nature

"Means her provision only to the good,
That live according to her sober laws,
And holy dictate of spare temperance."

That

"Swinish gluttony
Ne'er looks to heaven amidst his gorgeous feast,
But with besotted, base ingratitude,
Crams, and blasphemous his Feeder."

MODERATION IN THINGS NOT HARMFUL

There is a tendency to limit the meaning of the word appetite to bodily cravings. But it is just as true that our welfare depends on moderation in the gratification of noble desires as in restraining the cravings of the body. One may be intemperate in food, drink, sleep, clothing, joy, sorrow, play, study, anything—even in the advocacy of temperance. I may add, too, that a good cause can be injured by its injudicious friends, acting intemperately.

TOTAL ABSTINENCE FROM THAT WHICH IS INJURIOUS

A wise person does not court injury by trying how near he can walk to the brink of a high cliff without falling from it. He avoids needless risk. Total abstinence from all things harmful is the only safe course.

DANGERS IN THE USE OF ALCOHOLIC LIQUORS

Since alcoholic liquors have proved harmful to many, the first danger lies in the use of them to any extent, except as they may be prescribed

by a very capable and trustworthy physician; the second, in the fact that they exhilarate the drinker and impair his judgment, so that more is taken than he intended to drink; the third, in that they actually create a want of the system, a thirst which can be assuaged, even temporarily, only by increased quantities. In general, it may be said that often the drink is not what it is represented to be, but a mixture containing poisonous drugs, and that when the drink habit is formed few obtain power or grace sufficient to break it.

SOCIAL TEMPTATION TO INDULGENCE

It is very difficult for a young person to disappoint the expectation of associates, and refrain from indulgence which comes with such insinuation and force as to disguise it when practiced publicly by many of his friends. The refusal to indulge with them seems to be such a harsh condemnation of their usages that amiable persons who dislike to offend their friends are led into evil before they are aware of what they do. It requires courage to push the temptation aside. But a courteous refusal to betray one's principles secures the respect and approval of all whose opinion is of value.

The following anecdote which Col. Trumbull told of himself reminds us of the warning: "Woe to him who putteth the bottle to his neighbor's lips." It shows the evil which may follow temptation, and the courage required to resist.

"One of the last of the kings of the Mohegans was Zachary who had been a great drunkard. But a sense of the dignity of his office came over him, and he resolved that he would drink no more. He was accustomed at the annual election to dine with the governor of Connecticut. One of Gov. Trumbull's boys who had heard Zachary's story thought that he would test him to see if he would stick to his cold water. So at dinner he said to the old chief:

"Zachary, this beer is excellent; will you taste it?"

The old man dropped his knife, leaned forward with cold intensity of expression, his black eyes sparkling with indignation fixed on him.

"John," he said, "you do not know what you are doing. You are serving the devil, boy. I tell you that I am an Indian! and that if I should but taste your beer, I should not stop until I got to ruin, and became again the drunken, contemptible wretch your father remembers me to have been. John, while you live, never tempt a man to break a good resolution!"

CIGARETTE SMOKING BY BOYS A SERIOUS EVIL

Lack of space hinders me from saying much here on this topic. However, the books on physiology and hygiene which the law requires

to be used now in all schools, contain so much that is good concerning the evils of alcoholic drinks and tobacco, that there is less need of extended suggestion on these subjects from other sources. If the teacher appreciates the evil which results from the use of tobacco by pupils in retarding the development of mind and body, and in blunting the sensibilities, he will use the material furnished him in the books to such advantage that we may hope for a reformation through general education. In what other way can it be secured?

A PERSONAL DISCUSSION

A drunkard assailed a Washingtonian, but could only say, "There goes a teetotaler!"

The gentleman waited until the crowd had collected and then, turning upon the drunkard, said, "There stands a drunkard! Three years ago he had \$800; now he can not produce a nickel. I know he can not. I challenge him to do it, for if he had a nickel he would be at a saloon. There stands a drunkard and here stands a teetotaler, with a purse full of money, honestly earned and carefully kept. There stands a drunkard! Three years ago he had a watch, an overcoat, shoes and decent clothes; now he has nothing but rags upon him. His watch is gone and his shoes afford free passage to the water. There stands a drunkard and here stands a teetotaler, with a good hat, good shoes, good clothes, and a good watch all paid for. Yes, here stands a teetotaler! And now, my friends, which has the best of it?"

The drunkard slunk away, glad to escape further notice.

FORMATION OF HABITS

Books have been written about habits; their nature, power, use, danger. No work on education can overlook the subject. Training is a process of forming habits. That which we have thoroughly learned has been brought into the mind so often and in so many ways that it recurs at every opportunity. We do not have to make a great effort to recall it. It even stands at the door and knocks for admission.

It is similar with physical acts. One can learn to walk or talk or play a musical instrument and think of something else. The muscles and nerves, through long training, acquire the faculty of doing with precision what we have accustomed them to do, without conscious guidance of the mind. The tendency of an activity, physical or mental, to repeat itself is the habit. This tendency to do what we have done often may become a second nature, almost irresistible. Even acts at first painful, may become at last indispensable; and by habit we are enabled to do rapidly, accurately, automatically.

things which at first were done only with much thought, pain and effort. If our habits are good, the usefulness of our lives may be increased many fold; but, if they are evil, they create a momentum which drives us downward with an increasing rapidity similar, possibly, to that which, in physics, results from the "law of falling bodies."

HABITS MORE EASILY FORMED THAN BROKEN

Bad habits are as easily formed as good ones. It may be that they are more easily formed, since it is sometimes easier to slide into vice than to climb into virtue.

It is hard to break a bad habit, but it can be broken. The best way, no doubt, is to give all the energy, watchfulness, and grace one can obtain to the formation of a good habit which counteracts it. This produces an opposition, and brings on a conflict; but if one's character has not been weakened too much by the destructive effect of bad habits, the result should not be uncertain.

Indulgence in alcoholic drinks and tobacco has been mentioned. Gluttony is no better in principle. Late hours, revelry, needless exposure and privation, though we take pride in them because of the immediate advantage which they seem to give, are evil. The restraint of the lungs and other vital organs, which fashion decrees sometimes; the exclusion of pure air from living and sleeping rooms, and all uncleanness are to be avoided.

There are habits which destroy reputation, as those of stealing, cheating, lying, boasting, slandering, defaming, etc. There are some that dishonor one's self and family, as drunkenness, licentiousness, idleness, and others which lead to poverty and crime. There are habits of prodigality which waste money, and others, as indulgence of passion, which speedily takes away self-control. Some, as betting and all forms of gambling, incur needless risks; while chewing and spitting, smoking in public places, swaggering, etc., are offensive to others.

HOW SHOW THAT ACTIONS AND HABITS ARE EVIL

The teacher will sometimes find difficulty in having pupils look at some bad habits without prejudice. If she attempts, without careful preparation, to condemn the use of tobacco, betting or other bad habit, before a number of boys who see the men who are their models practice these very evils daily, she may fail signally.

It is prudent to divide difficulties that we would overcome, when we can do so, and attack the divisions separately. Boys may be persuaded singly when the support of their fellows would encourage them to an unthinking resistance to the teacher's advice. The teacher can reason with the pupils singly, taking the difficulty in parts; asking questions whose answers will show the wrong of the thing to be condemned. The pupils in this way are led of their own volition to condemn what the teacher wishes them to avoid.

When conditions are ready, the teacher can secure united condemnation of the wrong and commendation of the right. However, in some schools the moral tone may be so true and strong that it carries school sentiment with it, and can be appealed to with confidence in a good effect at any time.

EVIL ACTION AVOIDED BY DEVELOPING THE MORAL NATURE

The moral nature of the pupils needs to be developed judiciously; and we make a mistake when we conclude that because the training of the pupil out of school has given him wrong notions, his case is morally hopeless, and he should be excluded from association with good pupils. Are complete moral ideas innate? Why should not the teacher take as much care in developing right moral notions in the pupil as in securing correct procedure in solving problems in arithmetic?

The state's need that every citizen should be good is greater than its need that every citizen should be smart. Then pupils should be taught not only to know the good but to practice the



"God sent his singers upon earth
That they might touch the hearts of men,
And bring them back to heaven again."

right ; for, as Robert Hall said, " We are more influenced by the frequent recurrence of objects than by their weight and importance, so that habit has more importance in forming our character than our opinions have. The mind naturally takes its tone and complexion from what it habitually contemplates."

CONFIDENCE IN HABIT

" I trust everything under God to habit, upon which, in all ages, the lawgiver as well as the schoolmaster has mainly placed his reliance : habit, which makes everything easy, and casts all difficulties upon the deviation from a wonted course. Make sobriety a habit, and intemperance will be hateful ; make prudence a habit, and reckless profligacy will be as contrary to the nature of the child, youth or adult, as the most atrocious crimes are to any of us."—LORD BROUGHAM.

" Ill habits gather by unseen degrees,
As brooks make rivers, rivers run to seas."
—OVID.

" Small habits, well pursued betimes
May reach the dignity of crimes."
—HANNAH MORE.

—*School News and Practical Educator.*

HE KNEW THAT SIGN

One day the teacher asked the third grade to tell of some of the sure indications that spring had come.

Silence reigned for a moment, then Johnny said : " It is always a sure sign of spring when we change our underwear."—*Little Chronicle.*

APRIL RAIN

It isn't raining rain to me,
It's raining daffodils ;
In every dimpled drop I see
Wild flowers on the hills.
The clouds of gray engulf the day
And overwhelm the town—
It isn't raining rain to me,
It's raining roses down.

It isn't raining rain to me,
But fields of clover bloom,
Where any buccaneering bee
May find a bed and room.
A health unto the happy,
A fig for him who frets—
It isn't raining rain to me,
It's raining violets.

—ROBERT LOVEMAN, in *Harper's Magazine.*

SPRING

She comes, she sings,
She does not know the miracle she brings ;
In her wide eyes
A white and exquisite virginal surprise,
As who should say : " What gracious world is this
Where at the sunlight's kiss
My soul has swiftly sprung from mystery and
disguise? "

Upon her face
An elemental ecstasy, a grace
Of burgeoning there seems—
Something of slumbering flowers and sleepy
streams
That wake and leap to love and happiness,
Nor know a future stress,
Nor the imperious woe of past and broken
dreams.

Her heart o'erflows
With joy of every blade of grass that grows ;
To her ungessed
Is the long road a million springs have pressed ;
For her the earth was born, and warm and sweet,
Lies at her dancing feet—
She can not read in wise old Nature's palimpsest.

O fresh, O dear
To wistful hearts she comes with every year,
And bids them leap
With the contagious joy of hopes that keep
Alive through patient winters. Thus the soul
Of All-that-Is its goal
Will reach, spanning the unknown gulfs from
sleep to sleep.

—LOUISE MORGAN SILL.

TOBACCO USING AMONG BOYS

Many encouraging words are coming to us from educators as to the helpfulness of the JOURNAL, especially in regard to its articles on the growing evil of cigarette and tobacco using among boys. Superintendent A. Reist Rutt, of Milton, Pa., writes, under the date of March 14 :

" Your crusade against cigarettes deserves the unqualified support of every conscientious teacher, the prayers of every mother, and the commendation of every true American citizen. The cigarette is a little thing ; but we, who come into daily touch with children, know what fearful havoc it is working, by wrecking the body, robbing the mind, and poisoning the soul. Every cigarette smoker is preparing a hell on this side of the grave and a hopeless eternity, because he is preparing to fall into the clutches of every vice to whose victims the gates of heaven are closed. God bless you in your work."



Primary Lessons

SECOND YEAR

THE SENSE OF TOUCH

PROBABLY nine out of every ten persons, if asked to tell off hand which of the senses is most accurate and capable of the highest development, would answer, "The sense of sight."

Careful consideration of facts, however, shows that we rely chiefly on touch, past or present, in forming a correct idea of objects, and that touch and not sight is thus the foundation sense. The merchant depends upon his fingers more than his eyes to enable him to detect slight variations in the quality of goods. A cook knows by the feeling when her dough is ready for the oven. A coin specialist distinguishes true metal from counterfeit by a single touch. In countless other instances where nice discrimination and critical judgment are required, touch is called upon more frequently than any of the other senses to give the casting vote.

Its great importance when highly developed is the best of reasons for giving special attention to the early training of this sense. Not every child, it is true, even under the most favorable circumstances, can acquire an expert's delicacy of touch, but all can so increase the sensitiveness and efficiency of this organ as to double and treble its ordinary value. Moreover, the sense of touch can not be well trained without greatly increasing the child's brain power as well, since both the attention and the judgment are continually being called into play along with such training.

Class work on the sense of touch should follow lessons on the related topics of the skin and the hand. If we start with what the children already know about this sense, the first topic will naturally bring out some of the ways in which touch is a help to us.

(1)

FIVE LITTLE SERVANTS

Some people think they are fortunate if they have one servant that can always be depended

upon. They are really much better off than they think, because almost everybody has at least five.

Each one of these servants is always on the watch to find out what his master or mistress wants to know and to tell him about it. The ones you have always do just what you want them to do, and if you treat them well they will all stay with you as long as you live.

Who knows the names of these faithful little servants?

If the children can answer, let them do so. If not, write on the board the names of the five senses and let every child tell something that each of these little helpers has done for him since he got up this morning.

Our talk today will be about our little servant, Touch. We shall find out all we can about the ways in which he helps us, and how he deserves to be treated in return. Of course, too, we shall want to know where to find him.

(2)

WHAT TOUCH DOES FOR US

Elsie may come to the platform and close her eyes.

While she keeps them shut, tap her lightly on the arm or shoulder. Then ask her to open her eyes and tell what you have just done. How did she find out when she could not see? How did she know what part of her arm was touched?

Robert may close his eyes. Now tell me what I have put into your hands.

How do you know it is a ball? What kind of a ball is it?

How do you know it is a ball, instead of a cube? That it is the size of an apple, instead of a marble or a football? That it is made of rubber, and not of leather or glass?

Have ready beforehand a number of small familiar objects on a low table and uncover them at this point. They should be of different sizes, shapes, and materials, such as a top, a pair of scissors, a silk handkerchief, a foot rule, an ink bottle, a spool of cotton, a bit of lace, &c.

Let one child after another come to the table and touch one of these articles, give its name, and tell something about it.

Call upon all in the class, one at a time, to name something in the room that they could recognize by the touch even if they had no other sense helpers.

What does Touch tell us about each of the things that has just been named? What does Touch tell us about snow? about fur? a knife? a piece of chalk? glue? a silver dollar? a lead pencil?

What can we find out about the shape of an

object by feeling of it? What can we tell about its size? about the material of which it is made?

Name something that feels rough to the touch; something that feels smooth; cold; warm; hard; soft; heavy; sharp; hot; light.

Name an object that is round; one that is square; one that is large; oblong; oval; small and light; smooth and silky. What sense has helped us to find out all these things?

Put your hands on your heads. What does Touch tell you about the shape of the head? about its size? How do you know that the head feels hard instead of soft?

What can Touch tell you about your arm? your hand? your leg? your body trunk? your neck?

Vary the exercises by calling on one child to name an object that he can identify by the sense of touch, and upon another to state what Touch tells us about it. Allow each child who answers correctly to call on some one else to answer the next question.

Bring all exercises to a close before the children have time to grow weary, or their eager attention begins to slacken. Then, at the beginning of the next class period on this subject, sum up the chief points already developed, perhaps using these as a blackboard reading lesson.

POINTS TO REMEMBER

Each one of us has five little servants always ready to work for us.

These helpful little servants are our Five Senses.

One of the most useful of them all is Touch.

Touch tells us about the size of things, whether they are large or small.

Touch tells us about the weight of things, whether they are heavy or light.

Touch tells us about the temperature of things, whether they are hot or cold.

Touch tells us about the shape of things, whether they are round or square or oval or oblong or triangular.

Touch tells us whether an object is rough or smooth, fine or coarse, sharp or dull, thick or thin.

How many things we should know nothing about if it were not for this good little servant, Touch!

(3)

WHERE TOUCH LIVES

Each of the senses has a room all to itself in our bodies, where it stays and does its work as long as we live. Indeed, Sight and Hearing and Smell each have two very small rooms.

Point to the rooms where Sight lives in your body; where Hearing lives; where Smell lives. Taste has but one room. Where is it?

Touch, too, has only one room, but it is larger than all the rest put together. Who can find it?

Most children probably think of the sense of touch, when at all, as located only in the hand, especially as most exercises given to develop this sense call for the use of the hand.

Let the next experiments be such as will show that other parts of the body also possess the sense of touch.

Call one of the children to the front of the room, and tell him to close his eyes and fold his hands. While he remains thus, touch his forehead, foot, back, elbow, wrist and other parts of his body one after another, at the same time asking him to name the part touched.

Ask how he can do this while his eyes are shut and he has kept his hands folded. Give the other children a chance to try the same experiment with one another. Let them see if they can find any part of the body that does not have the sense of feeling.

Probably all the children in the room have had their hair cut at some time, or, at least, have had the ends clipped. Did it hurt to have this done? Why not? Why is it that it hurts so much to cut a finger, when it does not hurt to have the hair cut?

Who knows now where the room is in which Touch lives? Think of a reason why he needs to stay in every part of the skin. Why is he not needed in the hair?

(4)

WHAT WE CAN DO FOR TOUCH

In our other talks we have found out a great many things that Touch does for us, but not a single one that any of us ever does for this good little servant.

It is never fair for all the favors and help to be on one side, so, today, we are going to try to think of ways in which we can be good to Touch and help him.

We can keep his room clean for one thing. Most servants are expected to keep their own rooms tidy, but Touch does not do this. His home would always go dirty if we waited for him to take care of it.

Some parts of the large room that Touch lives in are used more than the rest, and so get dirty sooner and need washing oftener. Find one of these parts. Find another. Find a third.

How often do the hands and face need to be washed to keep them clean? Every part of the big room where Touch lives needs a good bath once or twice a week, and it looks better and feels better if you give it a cool sponge bath every morning as soon as you are out of bed. Touch will do all the better work for people who give him a sweet, clean room to live in.

Another way in which we can help Touch is to give this little servant something to do every day, and to see that he does it just as well as he can.

If we allow him to be idle, or to do his work carelessly now while we are children, he will never be able to work in any better way for us when we are grown up.

POINTS TO REMEMBER

Each one of the senses has its own little home in our bodies.

Sight lives in our two eyes.

Hearing lives in our two ears.

Smell lives in our two nostrils.

Taste lives in our mouth.

Touch lives in all parts of our skin.

We can help Touch by always keeping his home sweet and clean.

Touch will do better work for us if we bathe the skin every day.

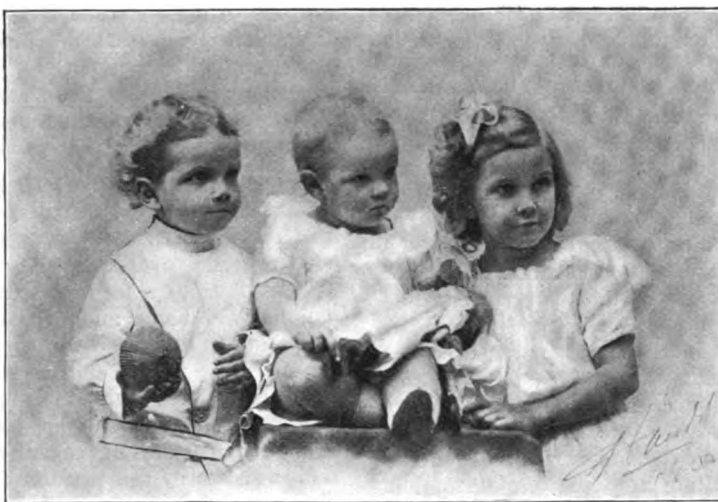
We can help Touch by giving him enough to do, and by seeing that he always does his work well.

ble of exercising the fine sense of touch that is necessary in many kinds of skilled work, such as watchmaking. Here, of course, steadiness of the muscles is necessary. But the sense of touch must also be delicate or else the workman can not tell whether or not he is holding his instruments properly. Any such expert work as judging of fabrics like cloth by the sense of feeling, or judging of the quality or finish of goods by touch would be impossible for one whose sense of touch is not keen.—B. P. COLTON, A. M., Professor of Natural Science in Illinois State Normal University.

SOME THINGS THAT INJURE HEALTH

If you want to be a healthy, strong, success-

ful man, if you want to live a happy life, do not smoke, do not drink alcoholic beverages, do not associate with corrupt people, and do not indulge in any vices.—F. C. VAL-
ENTINE, M. D., in *Medical Record*.



"What are all our contrivings, and the wisdom of our books,
When compared with your caresses, and the gladness of your looks?"

THE CIGAR-
ETTE EVIL

The effect
of cigarette

smoking on boys is clearly shown in the following report of the principal of one of the Chicago schools, who carefully studied the effect of the cigarette habit on school work. He says:

In the last three years, in my school, I have found 125 boys who smoked from two to twenty cigarettes a day, and not more than ten of them were able to keep up with their class. Among these 125 boys were found nearly all those pupils who were from two to five years older than the average age of children of the same grade, as well as ninety per cent of those boys who were hard to get along with, and all of those who were in the habit of playing truant.

"Twenty-four stated that the reason they failed to learn their lessons was because most of the time they were too sleepy to study: thirty said they were always dizzy after smoking, and did not feel like thinking; twenty-two could not write neatly because their hands trembled; several, to use their own words, felt shaky when they walked."

AUTHORITATIVE QUOTATIONS

EFFECT OF ALCOHOL ON THE SENSES

Measurements of the senses both before and after the use of alcohol shows a constant depression and lowering of all activities. In doses of one ounce of alcohol, a measurable diminution is apparent. Larger doses increase this effect up to partial and total paralysis.—T. D. CROTHERS, M. D., in *Journal American Medical Association*.

The use of alcoholic drinks makes all of the senses less acute.—WINFIELD S. HALL, M. D., Professor of Physiology in Northwestern University Medical School.

ALCOHOL AND THE SENSE OF TOUCH

Alcohol blunts the sense of touch. Under the influence of alcohol no one would be capa-

GOOD NEWS FROM ENGLAND

BRITISH PHYSICIANS WANT COMPULSORY TEMPERANCE EDUCATION

MR. Arthur Chamberlain, a well known English manufacturer, brother of Joseph Chamberlain, M. P., in a recent speech said that the only competitor he was afraid of was the United States, and that he feared it only because of its superior system of education and the fact that the people of that country drink only half as much intoxicating liquor as Englishmen.

A movement, inaugurated by physicians, is now on foot for the adoption by Great Britain of the educational method against drink.

About the middle of January, the Council of the British Medical Association, through a committee of thirty-one of its members, including Sir Lauder Brunton, Sir Henry Thompson, Sir William Turner, Sir Victor Horsley, and Professor G. Sims Woodhead, asked every registered physician in England, Scotland, Ireland and Wales to unite with them in signing a petition for compulsory public school teaching of the laws of health, including elementary instruction as to the nature and effects of alcohol.

This petition, which late advices from England show has already been signed by nearly 15,000 practitioners in all parts of Great Britain, states as its *raison d'être* the facts that, as members of the medical profession, the signers have constantly before them "the serious, physical and moral conditions of degeneracy and disease resulting from the neglect and infraction of the elementary laws of hygiene;" that "much of the degeneracy, disease and accident with which medical men are called upon to deal is directly or indirectly due to the use of alcohol; and that a widespread ignorance prevails concerning not only the nature and properties of this substance, but also its effects on the body and mind."

The petition reviews at some length the steps taken in other English speaking nations toward securing such instruction, namely, Canada, Australia, Natal, and especially in the United States where, the petition says, "the whole question is dealt with still more completely."

In view of the fact that this instruction is legally compulsory throughout the United States, and that certain opponents have vainly tried to abolish such legal requirements and to postpone all teaching concerning the nature and effects of alcoholic drinks until the later school years, it is refreshing to note the emphasis laid by this petition of British physicians upon the necessity of having the instruction compulsory and given at an early age. The signers state

that under the present school arrangements in Great Britain, health instruction is permissible, but, they add:

"By this method effective instruction is given to a small proportion of the pupils only. This does not appear to us to be adequate. We believe that it should be compulsory and be given at a much earlier age than at present. . . We would urge the Board of Education of England and Wales, the Scotch Education, and the Irish Education Authorities to include in the simple hygienic teaching which we desire, elementary instruction at an early age on the nature and effects of alcohol. . . .

"Until the four Central Educational Authorities of the United Kingdom include this subject as a part of the system of National Education, it appears to us that the mass of the pupils must fail, as at present, to receive that systematic teaching of hygiene and of the nature and effects of alcohol which alone we consider adequate to meet the present need."

Thoughtful students of current conditions in national life in Great Britain, as in France, Germany, and other European countries, are gravely concerned over the widespread drink evil with its direful consequences to individual and national well-being and prosperity. They are beginning to recognize the greater sobriety of the American people and the educational methods which have helped to bring about that sobriety as potent factors in the industrial and commercial success of the United States. They see, as shown by this petition from the British physicians, that the hope of the nations lies in preventing the formation of drinking habits, through education of the rising generations.

APRIL! APRIL! ARE YOU HERE

BY DORA READ GOODALE

April! April! are you here?
Oh, how fresh the wind is blowing!
See! the sky is bright and clear,
Oh, how green the grass is growing!
April! April! are you here?

April! April! is it you?
See how fair the flowers are springing!
Sun is warm and brooks are clear,
Oh, how glad the birds are singing!
April! April! is it you?

April! April! are you here!
Though your smiling turn to weeping,
Though your skies grow cold and drear,
Though your gentle winds are sleeping,
April! April! are you here!

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When April one day was asked whether
She could make reliable weather,
She laughed till she cried
And said, " Bless you, I've tried,
But things will get mixed up together."

—Selected.

THE REPLY TO THE COMMITTEE OF FIFTY

ITS RECEPTION BY THE PUBLIC

THE *Report* of the Sub-committee of Fifty with its denunciations of the present system of temperance education in our public schools and its condoning of moderate drinking has elicited no chorus of approving comments from the medical and educational press, but quite the reverse.

COMMENTS OF MEDICAL JOURNALS

The Cincinnati *Lancet-Clinic* publishes a long résumé of the *Reply* to the Sub-Committee's *Report*, and adds that the *Reply* "seems to score at every point on which it takes issue" with the Sub-Committee.

The Chicago *Medical Standard*, referring to the *Report* and the *Reply*, says:

"The danger of alcohol is such a real one, so subversive of the welfare of society, that it can hardly be emphasized too much—not, of course, at the expense of truth. Yet the splitting of scientific hairs is hardly necessary on either side. Let the simple, unembellished truth be told to the children without reserve, by all means. The horrors of alcoholism are not likely to be much overdrawn. . . .

"The criticism that the indorsed text-books have been exaggerated can hardly be made against the later school books on physiology, written by professors in the Northwestern University Medical School and the Harvard Medical School. These are clean, up to date, and imbued with the teachings of modern science. To discontinue the public instruction in

physiology with its bearings on the alcohol and tobacco questions would certainly be a mistake."

THE ATTITUDE OF EDUCATIONAL MAGAZINES

An editorial in *School and Home Education*, a leading educational magazine of Illinois, says of the Committee of Fifty:

"What can be the motive of any committee of intelligent men in setting in array their influence against a movement that, in spite of the want of skill of instructors in too many instances, is without question doing more to promote temperance in this nation than any other influence now active, it is not easy to conceive. It certainly can not be in the interest of science, nor can it be in the interest of better living among those who are wasting their earnings and destroying their bodies and souls in our dram-shops."

Again, in the March number of the same magazine, commenting on the *Reply* to the Sub-Committee, the editor says of the alcohol-a-food doctrine as promulgated by the Committee of Fifty:

"To call alcohol a food is to encourage hundreds of thousands to place in jeopardy their well-being here and perhaps forever, who would avoid the danger if the whole truth were known. . . . The part of essential value in man is the moral will. The question, what is the physical effect of alcohol upon those cells of the body that help to reinforce the moral will, suggests a line of investigation that the scientist will do well to follow before he hastens to proclaim that alcohol is a food, thus leading the ignorant to class it with bread and meat as diet. It certainly often undermines the health and leads to moral weakness and imbecility. What leads to this is certainly not food as the term is understood by the plain people."

Hon. Henry Sabin, ex-superintendent of public instruction in Iowa, speaks out in no uncertain tones in the *Journal of Education* of Feb. 25, upon this *Report* of the Committee of Fifty. He says:

"Whatever charges are made against the system of scientific temperance instruction may, with equal force, be brought against every effort to control and abolish the gigantic evils which threaten the American youth of today. In certain quarters, the practice of inculcating total abstinence seems to be offensive, and yet no one was ever harmed by such teaching. On the other hand, no one can deny that hundreds, even thousands, have been ruined through habits which commenced with the moderate use of intoxicants. . . .

"Let me quote an extract from the *Report* of the Committee of Fifty as telegraphed to the *Ottawa Sun*: 'Failing to observe the distinction between the diametrically opposite conceptions of use and abuse, some of the advocates of temperance education have not hesitated to teach our children that the horrible results of a prolonged use of alcohol may be expected to follow any departure from total abstinence.'

"That is not far from the truth, because we do aim to teach them that there is a possibility, and a very strong one at that, that the dire results of intemperance may follow any departure from total abstinence. We are earnest enough in our determination to impress upon the mind of the child that the origin of the drink habit is in allowing it to fasten itself upon them when the mind and body alike are in that plastic state which is incident to early childhood."

These citations from the medical and educational press of the country tell their own story.

"to give wider circulation to this magnificent *Reply* than it would have received had not the Senate placed its seal of approval upon it."

This action of the Senate is the more significant because it was entirely unsolicited.

EASTER

Breaks the joyful Easter dawn
Clearer yet and stronger.
Winter from the world has gone,
Death shall be no longer.
Far away, good angels,
Drive night, and sin, and sadness,
Earth awakes in smiles alive
With her dear Lord's gladness.

Roused from long and lonely hours,
Under snowdrifts chilly,
In his hands he brings the flowers,
Brings the rose and lily.



"Each fair face is lifted up in joyful adoration sweet,
To him who brings the springtide back, and melts the snow's white winding sheet."

The fallacy that moderate drinking is safe has been disproved by centuries of bitter experience and again by the disclosures of modern science. It is cause for congratulation that this fallacy is not to be given a new lease of life by the teachers and physicians of the United States.

THE REPLY TO THE COMMITTEE OF FIFTY MADE A GOVERNMENT DOCUMENT

On motion of the only member of the medical profession in the United States Senate, Senator Gallinger, of New Hampshire, the *Reply* to the Physiological Sub-Committee of the Committee of Fifty has been made a government document by unanimous consent of the Senate. Senator Gallinger was a physician of wide repute before he entered politics, and therefore is accustomed to judge of these questions from a scientific standpoint.

"It has been a pleasure to me," he writes,

Every little buried bud
Into life he raises.
Every wild flower of the wood
Sings the dear Lord's praises.

Open, happy flowers of spring,
For the sun is risen.
Through the sky glad voices ring,
Calling you from prison.
Little children dear, look up,
Toward his brightness pressing,
Lift up every heart a cup
For the dear Lord's blessing.

—LUCY LARCOM.

Of all the months that fill the year,
Give April's month to me.
For earth and sky are then so filled
With sweet variety.

—L. E. LONDON.



Grammar Lessons

INTERMEDIATE
WORK

THE FRAMEWORK OF THE BODY

HEALTH has rightly been called "potential power," the power that can do things.

"The future welfare of the nation," according to President Roosevelt, "depends on the way in which we can combine in our men—in our young men—decency and strength;" or, in other words, the ability not only to do things but to do right things, and to do them in the right way.

By common consent, the aim of the modern public school has come to be the development of character and ability in the children intrusted to its care. A study that does not contribute in some degree to one or the other of these great essentials has no place in the school curriculum of today.

The study of physiology and hygiene holds its present high place in public esteem because of the close relation which it bears to both character and ability. Primarily, this study makes for health,—for the development of a strong body able to do and endure whatever physical and mental labor one may be called upon to perform. But it stands also for the cultivation of intelligent self-control and thus for the development of a noble character through its advocacy of the moderate enjoyment of good things and the refraining entirely from pernicious practices.

In such a study, the child must first of all be taught enough of the make-up of his body to understand what will conduce to health. When he studies the skeleton, for instance, he must find why such a structure is needed, the relation in which it stands to the rest of the body, and what are the conditions upon which its health and well-being depend.

Such facts can easily be presented to any grammar school pupil in a way to arouse and hold his eager interest. A boy who has made a kite knows that a light strong framework is the first thing needed. From this vantage ground

of knowledge that is already his, there is but a single step to the necessity for a similar structure in the human body. There is absolutely no reason why study of the body framework should not prove as attractive to the grammar school child as kite-making already is to the average boy or the construction of a doll's bonnet is to the girl.

First lessons on this topic should invariably treat of the skeleton in its

RELATION TO OTHER PARTS OF THE BODY

Scientists may be and often are fascinated by the study of bones as such, but it appeals to the average person, and especially to the child, only when these organs are considered as an essential part of the living body.

Ask the class to rise, stand erect, advance one or two paces, retrace their steps, and then be seated. What part of the body is it that makes it possible to stand and walk?

In what part of the body is the framework found? Have some one explain how it is fastened together, and how it is connected with the muscles, the tendons, and other parts of the body. Beginning with the skin, what are the different layers of the body between the surface and the framework?

Call for reasons why it is better to have the skeleton on the inside of the body rather than on the outside. Why is an outside skeleton an advantage to the turtle and the oyster?

Write on the board the names of half a dozen or more animals having a body framework of some kind. How do these animals compare in size? Call attention to the fact that it is the framework of the body that mainly determines how large an animal or a person will be. Measure the height of the tallest pupil in the room and also the shortest. Have the class find in what part of the body framework this difference in height is greatest. In what respects is the body framework of a tall person most unlike that of a short person?

THE PURPOSE IT SERVES

One use of the skeleton has already been mentioned, that of holding the body upright, and enabling it to stand or walk at will. Call further attention to the way in which the skeleton gives the body its distinctive shape both in man and animals.

It is the framework of a house or of a ship that decides what its shape will be, not the plaster and paint, or the sails. Just so with the living framework of the body. The different ways in which it is made up and put together are what distinguish man's body from that of the lower animals, and their bodies from one another.

Name some animals that are very unlike, and point out the differences in their body framework. For instance, show in what particulars the skeleton of a greyhound is unlike that of a St. Bernard; that of the cow unlike that of a rabbit. Decide, from appearance only, how the framework of a cat is like that of a squirrel, and how it is unlike it.

In each case, after comparing the skeletons of animals, notice how this is always adapted to the kind of life which any particular animal leads. A race horse needs long slim legs and a draught horse heavy stout ones. All the limbs of an animal are adapted to walking, while man's are fashioned for work as well, hence his hands and feet are quite unlike.

Another purpose served by the inside body framework of animals is the great freedom of movement it allows. A lobster or clam can move only slowly at best, while many of the higher animals can run at the highest speed. The human body is capable of the greatest possible variety of motions. How does the great number of bones of which it is made up help to make all these movements possible?

Let the class try to see in how many ways they can move their hands; their arms; their necks; their body trunks. How are the bones of each of these parts of the body arranged to make such movements possible?

Point out the fact that this is one of the great differences between the framework of the body and that of a house or a machine. The latter stays just as it was made in the first place. It can neither move nor grow, and it is valuable only because it does remain fixed.

The body framework is not only so put together that it can move freely, but the more any part is used the more skillful it becomes. Why is it, for instance, that the hands of a pianist or a watchmaker are so much more dextrous than the hands of a person who has never done any fine work? Name kinds of work and play that will help to make different parts of the body limber.

If the important work of the skeleton in protecting the more delicate parts of the body from harm does not suggest itself to the class, see that this also is brought out clearly. Have them find parts of the framework that are shaped especially to give protection to some part of the body.

Show why the bones of the skull are shaped and arranged so differently from the ribs, although both have the same function,—to protect the organs within. How does the structure of the spinal column make it at once a protection to the spinal cord, strong enough to hold up the weight of the body, and flexible enough to allow it to move in every direction?

ADAPTATION OF MEANS TO END

There are two essentials in the makeup of every kind of a framework. Let the class discuss this proposition until they have thought what these essentials are. The kind of material necessary to make a good kite or a bicycle will help to suggest answers.

What is there in the makeup of bones that gives them strength? that makes them light? Get a number of clean bones of different kinds for the class to examine, with these thoughts in mind. Let them try experiments to show that a hollow cylinder is stronger than a solid one of the same size and weight, and that a curved or arched surface can bear more weight than one that is flat. Find bones in the body that are lighter and stronger because made or put together in these ways.

Name the different shapes that can be seen or felt in the bones of the human body. Show how the shape of each bone exactly fits it for the place it occupies and the kind of work it has to do.

Find the bones that are especially fitted for support; for motion; for protection; for more than one of these functions.

Soak a long bone in 10 per cent acid until soft enough to tie in a knot, and have the class try burning small bones at home until these are ready to crumble. What has the bone lost in each case? What would be the disadvantage if the body framework was made up entirely of animal matter? of mineral matter?

Have the class find from their books how a person's bones change as he grows older. Then ask them to explain why an old person is more likely to break a bone by a fall than a child. Why is it a bad thing to make a baby try to stand or walk before he is ready of his own accord to do so?

CONDITIONS OF GROWTH

Consider general conditions first. Bone is made out of something. Find what its constituents are and on what its growth depends. Trace with the class the process by which nourishment gets to the bones. In connection with this topic, also, find what foods contain most of the special ingredients needed to make bone. A list of such foods can readily be found in most physiologies for these grades.

Why should one or more of these special bone-making foods form part of our diet at one meal, at least, every day? Why is it more necessary for children and young people to have enough of such food than it is for grown persons?

The importance of open air exercise has already been hinted at, but it should be strongly

emphasized, especially for girls. Notice what games they prefer, and set them to finding what parts of the body are thus getting the best development. What parts are left undeveloped? What games would make good the deficiency?

Call attention to the fact that it is the regular continuance of exercise day after day that is of real value in developing a sound body; that overdoing the matter at one time and neglecting it at another does little good, and sometimes much harm.

Direct attention to those in the class that sit and stand particularly well. Find who has the best shaped foot and hand, and have the class suggest ways of retaining and increasing the beauty of these parts of the framework. In this connection, have a special talk with the girls about the importance of loose, well-fitting garments for all parts of the body, explaining at the same time the harm done to the vital organs and thus to the health by tight bands or corsets.

In taking up the effects of alcoholic drinks and tobacco upon these organs of the body, point out the fact that the use of any one of these things tends always to undo everything that can be done by proper food, exercise, and all other advantages to further growth and development. No boy or girl who gets in the habit of drinking beer or smoking cigarettes can be sure that growth and health will continue the same as before the habit was formed, and in very many cases both will utterly fail. We all want the best developed bodies that can be had, and there is only one way to get them, by living the right kind of a life from our youth up.

AUTHORITATIVE QUOTATIONS

IMPORTANT MATTERS IN SCHOOL HYGIENE

Not only should children in school be taught how to stand, sit, and walk, but more important still, they should be taught how to breathe. . . . School desks are responsible for a good deal of deformity. The desks and seats are of uniform

height while the pupils are of various sizes. If too tall, the children must stoop, if too short, they must reach up some how. Physical exercise in schools should aim to cultivate the habit of sitting, standing, walking, and breathing properly.—J. CHALMERS CAMERON, M. D., Professor of Diseases of Children, McGill University, Montreal.

EXERCISE NEEDED FOR GROWTH OF BONES

Forming bones, growing muscles, developing nervous system, and the constantly changing conditions of childhood need exercise.—C. E. WINSLOW, M. D.



"Spring bursts today.
For Christ is risen and all the earth's at play."

WELL DEVELOPED ORGANS A PREVENTIVE OF DISEASE

The child whose organs have been well developed by skillful training will be able to throw off the products of disease, or even to resist the attack altogether, while the child whose physical education has been neglected, who has been allowed to sit bent up in the schoolroom has to succumb.—*Dietetic and Hygienic Gazette*.

GROWTH RETARDED BY ALCOHOLIC LIQUORS

Alcohol, even in very dilute solutions, exerts a most deleterious action on the protoplasm of plants and frog spawn, preventing development, retarding growth, and interfering with function; the younger and more highly developed the tissues, the greater is the effect of the alcohol upon them. This should be borne in mind in regard to children.—G. SIMS WOODHEAD, M. D., Professor of Pathology in the University of Cambridge, England.

ALCOHOL IMPAIRS CELLS AND TISSUES

We now know that alcohol, even in small quantity, has a peculiar corroding action on both cell and tissue, impairing its power of growth and repair, and diminishing its functional activity. The nutrition which would naturally be used to repair cell and tissue is diverted, changed, and becomes waste products.—T. D. CROTHERS, M. D. Professor Diseases of Brain and Nervous System, New York School of Clinical Medicine.

TEMPERANCE PHYSIOLOGY IN AMERICAN SCHOOLS

BY MARY H. HUNT

THE March number of the British *Temperance Record* contains a letter from a member of the Mosely Educational Commission to the United States, commenting on temperance education in the United States. Its writer in his journeyings in twenty-six of our states was most fortunate in being able to see for himself that "This teaching each child in American schools the danger of using alcohol and narcotics is carried out successfully," and fortunate also in being able to note results of this temperance education in the sobriety of the people of this country which he admiringly describes. It is a cardinal doctrine with Americans that if the people know the facts they can be trusted to act accordingly. Hence, they insist upon education for every child, and that part of such education shall be instruction as to how to care for the human body to make it the strong, obedient servant of an intelligent will.

The *Record's* correspondent says, "I found that in most states instruction as to the nature of alcohol and narcotics was by legislation to form part of the primary instruction given to every scholar. Had this direction been thus simply given and left to the teachers to carry out, as it was for a considerable number of years, much good would have resulted to the cause of temperance; but unfortunately, certain so-called temperance enthusiasts published some unscientific school books, and got these books adopted by various school authorities . . . This led to a setback in temperance teaching."

Here is a remarkable piece of misinformation. Not most states, as he says, require by legislation instruction as to the nature of alcohol and narcotics, but every state in the United States and the national Congress for all schools under Federal control, require in all public schools, as a progressive subject graded to the advancing capacities of all pupils, *the study of physiology and hygiene, which includes special instruction as to the nature of alcoholic drinks and other narcotics and their effects upon the human system.*

A sound national physique would never have been developed by teaching only the nature of alcohol and narcotics, important as that instruction is. The engineer must know something of the construction of his engine and of the work of its several parts in order to know how to take care of it and to understand how certain substances injure it. So some elementary knowledge of the structure of the body and of the laws of its health are essential to a clear understanding of how alcoholic drinks and other

narcotics hurt and destroy the human mechanism. Our laws require that all our children shall be so taught. This study is popularly termed temperance physiology or scientific temperance. It is a science requiring like other studies a time and place in the school curriculum and a graded school literature that contains the facts the law requires taught, for the use of all pupils who have text-books in other subjects.

Instead of leaving this new study, as the *Record* correspondent says, wholly to the teachers to carry out, teachers who had had no training on this subject, a syllabus was prepared seventeen years ago, in 1887, when the earliest laws began to go into force, by expert students of the subject stating in brief what science has proved true and what out of this should be taught the children of the country. Such action by the leaders of the movement was made necessary because of the newness of the study, to ensure that the whole truth and nothing but the truth, told in language children can understand, be taught on these subjects so vital to the future well-being of the nation.

The syllabus was signed by more than two hundred leading physicians, members of boards of health, legislators, state and national, who had voted for these laws, state chemists, presidents of colleges, and other educators. It was an expression of the best expert sentiment of our country in favor of teaching the children of the United States the physiological reasons for total abstinence from alcoholic drinks and other narcotics and for obedience to other laws of health. It became the standard of school literature on this subject.

A committee from the signers of this standard was chosen to examine school text-books on temperance physiology, to extend indorsement to such as conformed to the standard, and to petition authors and publishers of such books as fall below it to revise their books to those requirements. The committee has been continued in the Text-Book Committee of the Advisory Board and the Superintendent of the Department of Scientific Temperance Instruction of the Woman's Christian Temperance Union. Under such supervision an extensive school literature on this subject has been written, not by so-called temperance enthusiasts as stated by the *Record* correspondent, but by competent authorities, among them physicians, professors and teachers in our medical colleges, and published by different school book publishers of the country. All attempts to prove these books inaccurate have failed.

Millions of copies have been and are being studied every year by the children of this land. From them, aided by the faithful teacher, our children and youth are learning how to take

care of their bodies. The truths thus taught concerning the injury alcoholic drinks do to working ability have helped make us the nation this correspondent says he find us, viz., a country where "the people regularly recommence work on Monday;" where "it is almost impossible for an unsteady hand or eye to find employment;" where "the genius of the people sets itself against idleness and alcoholism;" where, in his travels of 6,000 miles in twenty-six states he saw "only one drunken man and he in the Bowery district, one of the lower parts of New York City."

On the whole, he says, his impressions of America may be summed up as follows: It is "a sober and temperate nation, which from its sobriety and temperance is able to devote the whole of its unclouded intelligence to the highest degree of efficiency in industry, trade and commerce, whose temperance enables it to value education at its right value; a nation, which knows that its progress depends upon its temperate and educated citizens."

It is from the temperance physiologies in our schools (which somebody told the correspondent are unscientific) that the people of this nation have learned that progress depends upon temperance, which in this country means total abstinence.

In spite of all these good results which are following the study of temperance physiology, there is a small clique of opposers. One set of them is referred to by the *Record* correspondent when he says that the number of prohibition towns and cities is multiplying so fast in America that the question is "how a liquor seller can earn a livelihood." The brewers and distillers depend upon the liquor sellers to exchange their drinks for the people's money. But the people are not buying these drinks as freely as they used to, hence the brewers and owners of brewing and distilling stock do not like the study of temperance physiology in the public schools, which is everywhere making for abstinence. It is cutting down their profits. They say, as this correspondent was told, that the text-books, teaching as they do that beer is a

dangerous drink, are "unscientific, inexact, and exaggerated." It is true that the study of these books has diminished the profits in beer, but when brewing stock goes down, human stock goes up.

Added to this class of opposers are a few men, some of them in circles that the Mosely Educational Commission might have met while in this country, who are not themselves total abstainers and who still believe in moderate drinking.

When these gentlemen awoke to the fact that the public school children in the United States are being educated to total abstinence, they began to charge that they were not being taught the truth as to the nature and effects of alcoholic

drinks and other narcotics; in other words, that the indorsed school physiologies were inaccurate.

When these opponents were asked to point out the inaccuracies, page and paragraph, that correction, if needed, might be made in the books in question, they evaded a direct answer and finally announced that they had organized a Committee of Fifty to investigate the whole alcohol question and to promulgate the results of those investigations which, they said, "would receive a measure of confidence not accorded to partisan statements."

This Committee has been investigating for ten years. In May, 1903, it published two volumes on the *Physiological Aspects of the Liquor Problem*. As the question in all its phases turns on what

alcohol is, whether it is a friend or foe to human beings, it was promised that these two volumes should settle this problem.

But their experiments and assertions only settled the fact that they have made no case against the scientific facts teaching total abstinence. Their extended and costly experiments present no proof that the indorsed text-books on temperance physiology now used in our public schools are inaccurate.

An exhaustive *Reply* showing the falsity of the claim of the Committee of Fifty against this study has been prepared, but had not been published when the Mosely Educational Commission was in this country.



"Speak low to me, my Savior, low and sweet
From out the hallelujahs, sweet and low,
Lest I should fear and fall, and miss Thee so
Who art not missed, by any that entreat."

A copy of this *Reply* was sent to every member of the United States Congress with a personal letter calling attention to it as a matter of information, neither asking nor expecting that any action would be taken concerning it by that body. But the United States Senate, unasked by any outsider, voted unanimously to print it, with an edition for the Senate Document Room. Senator Gallinger, M. D., of New Hampshire, who moved this action, writes:

"It has been a pleasure to give wider circulation to this magnificent *Reply* than it would have received had not the Senate placed its seal of approval upon it."

Such indorsement on the part of the highest deliberative body in our country gives the *Reply* added prestige and power. As a government document it is now being sent broadcast. The last edition brings the total output up to 81,000 copies.

The American people are virtually saying to the brewers, distillers, and moderate drinkers, especially concerning this latest scheme of trying to get unworthy books on this subject into our schools: "Hands off our children. They are the heirs to all the truth of all the ages on this subject. If your business and habits will not stand the searchlight of modern science, the business will have to go and the habits must either square with the truth or end with the drinkers whom the drink destroys."

THE REV. MR. CHICKADEE, D. D.

BY FLORENCE A. VAN SANT

A little clergyman is he,
With black and white cravat;
He bears a coveted degree,
And wears a soft silk hat.

So overflowing is his strain,
That he could dub "D. D."
Young theologues with meager brain
And bump of vanity.

With happy heart and merry voice,
He braves the cold and heat;
And to the loved one of his choice,
He whistles soft and sweet.

His sect is Congregational,
The wild-woods are his church;
The wind his "choir invisible,"
His pulpit is a birch.

The sermon we should not forget:
"Happy and cheerful be,
Have diligence, be brave, don't fret,"
Says Chickadee, D. D.

—*The Evangelist.*

BOOK NOTICES

THE MAN WHO PLEASES AND THE WOMAN WHO CHARMS, by John A. Cone. 75 cents post-paid. Hinds & Noble, New York.

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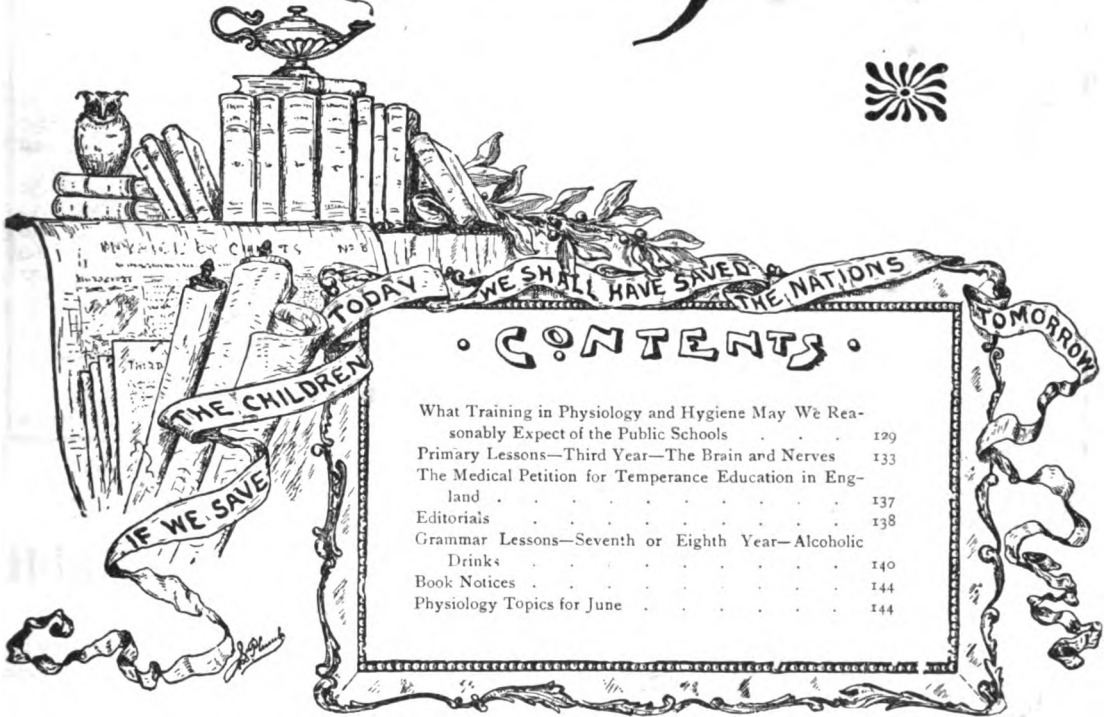
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THE SCHOOL PHYSIOLOGY JOURNAL



• CONTENTS •

What Training in Physiology and Hygiene May We Reasonably Expect of the Public Schools	129
Primary Lessons—Third Year—The Brain and Nerves	133
The Medical Petition for Temperance Education in England	137
Editorials	138
Grammar Lessons—Seventh or Eighth Year—Alcoholic Drinks	140
Book Notices	144
Physiology Topics for June	144

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MAY, 1904

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School Physiology Journal

Vol. XIII

BOSTON, MAY, 1904

No. 9

THE GIFTS OF MAY

BY EDITH M. THOMAS

A FLOWER for every day
That slips the sheath of jealous
Night in May!

The violet at our feet,
The lilac's honeyed bough,
The wind-flower frail and sweet,
The apple-blossom now—

Each keeps its promise, as Love keeps its vow:
A flower for every day in flowerful May!

A song for every day
That breaks in music from the heart of May!
The warbler mid new leaves,
The lark in fields remote,
The housewren at our eaves,
The oriole's haunting note
When orchard blooms down fitful zephyrs float:
A song for every day in songful May!

WHAT TRAINING IN PHYSIOLOGY AND HYGIENE MAY WE REASONABLY EX- PECT OF THE PUBLIC SCHOOLS

BY WILLIAM T. SEDGWICK AND THEODORE HOUGH

PHYSIOLOGY and hygiene were originally introduced into the public schools "for the purpose of affording information concerning the structure and functions of the human body, being expected thereby to contribute to the preservation and promotion of health; and they have kept their place, in spite of serious shortcomings, as a concession to the practical importance of sound ideas concerning health and disease."

Physiology and hygiene, unlike most of the other subjects in our schools, are rarely taken into account in promoting pupils. "They are seldom included in the list of requirements for admission to colleges or technical schools, and never in those for medical schools. They are not often much considered in educational congresses. And yet it is doubtful whether any subject in the whole curriculum of the public schools is of greater intrinsic importance as a preparation for life, or is capable of affecting more profoundly the whole mental attitude of men and women toward an enduring and well organized civilization."

PHYSIOLOGY AND HYGIENE NOW ESTABLISHED SCIENCES

Twenty-five years ago physiology was a new science, a mere adjunct to anatomy. Today it is established as an independent science, with its own professors, investigators, associations and other evidences of solidity.

Hygiene has made even greater progress within this time; in the management of infectious diseases, the disposal of sewage, the improvement of public water supply, the laying of sanitary pavements, and the disposal of dust and garbage. Boards of health carry on sanitary research, supervise the medical inspection of schools, isolate cases of infectious disease, provide for the disinfection of clothing and premises, enforce vaccination, and vacate unwholesome dwellings. Our school authorities are promoting hygiene by providing playgrounds and better ventilated school buildings, and by greater attention to the position, sight and hearing of pupils. Moreover, the home—its site, drainage, wall papers, ventilation, cookery—and the individual body—its exercise, fatigue, work, rest, play, clothing, bathing, hunger, thirst, sleep, growth and old age—"all these are dealt with today, not superficially and by tradition or experience alone, as formerly, but also by experiment. Physiology and hygiene have become experimental sciences, and have thus taken on a new and higher value."

Such is the present status of these sciences that the object of public school training in them must still be primarily practical and technical; viz., "a sound preparation for the right conduct of physical life. For although it is one argument for increasing the efficiency of instruction in these subjects that they give information on matters of great human interest, and that, when rightly taught, they are of high educational value, still the primary purpose of teaching them is not to give information or mental discipline, but because their subject matter is of immediate and enduring importance in determining and promoting the right conduct of the physical life, and especially the preservation and promotion of health. Their value is special rather than general, practical rather than cultural, technical rather than disciplinary."

While physiology and hygiene, in exceptional cases, have had a good influence in the school curriculum, they have not always justified their place; they have not, on the whole, accomplished what was originally expected of them.

They are too often looked upon by school authorities as an unavoidable necessity, and by teachers and pupils as a bore. Competent educators have favored dropping them altogether from the course.

This unfortunate state of affairs is due largely to the fact that the primary purpose of these subjects in the curriculum has been neglected or forgotten. From the first, the details of gross and minute anatomy have formed the major part of the work in physiology and hygiene in the schools. Function in health and disease has had an insignificant place because it has been poorly understood. The teaching in the public schools has lagged behind the advance of medical and hygienic science. Today it is inexcusably behind the times. "We now have facts which any one can teach and which should be made known as a preparation for the proper conduct of life; and it is these facts which should form the main part of the teaching." Anatomy should be restricted "to the minimum amount needed to give a clear conception of the general structure of the body as a mechanism and of the normal working of that mechanism. . . . An arid osteology is a poor introduction to the study of modern hygiene, nor is it calculated to arouse a compelling interest in the subject."

PHYSIOLOGY MORE IMPORTANT THAN ANATOMY

As to physiology, its educational value is much greater than that of pure anatomy. It is a good teaching subject, because it deals with a machine in which most of us are naturally interested. It has also the highest philosophic value; it imparts that lesson so well expressed in Huxley's statement, that "the distinctive feature of modern as contrasted with ancient physiology" is "the fundamental conception of the living body as a physical mechanism." The use and abuse of patent medicines and the frequent negligence in the care of the body prove that most people have not incorporated this fact in their physiology of living.

"We have urged that anatomy has no place in the public school curriculum, except as it is necessary to the understanding of the problems of physiology and hygiene; and we shall see it cut down to the minimum needed for this purpose without the slightest regret." Fortunately, however, the course in physiology may be made strictly subservient to personal hygiene without sacrificing its philosophical value. For "the physiology which is most useful in understanding the problems of personal hygiene is almost exactly the same body of facts which has the greatest philosophic value, and the method of presenting them is the same for the one purpose as for the other."

The course in physiology should teach the outlines of muscular contraction, nervous activity, circulation, nutrition, temperature-regulation, and without needless details.

"Again, physiology should not be made primarily or even to any large extent in public schools a means of laboratory training. Such training can be had more readily and more advantageously in chemistry and physics. To attempt to give the same laboratory training in physiology as in these would inevitably be to consume that time which is urgently needed for hygiene. The fundamental facts of physiology can be demonstrated and enforced in the laboratory, even in common schools, without much difficulty, and we should not for a moment depreciate the value or the necessity of a certain amount of this kind of instruction; but the use of the laboratory (always time-consuming) must not be allowed to distract attention from the true aim of this work or to interfere with its complete realization."

The course in physiology should "impart enough facts of structure and function to furnish a solid basis for sound training in hygiene, and to give meanwhile an abiding sense of the material composition and mechanical character of the human body and its environment and operation. With so much of preparation it becomes easy to pass on to a practical consideration of health and disease, the means of promoting the former and avoiding the latter."

HYGIENE MORE IMPORTANT THAN PHYSIOLOGY

The strictly hygienic part of the subject begins with personal hygiene—"the proper regulation of activities of individual life—muscular work, mental activity, feeding, protection against colds and other inflammations, the care of the body by, bathing and clothing and the like. These should not be given in short paragraphs, but should be fully treated for their own sake and from the standpoint of the organism as a whole rather than from that of special organs. These are subjects about which every one needs real and true information, and sooner or later seeks it. Shall such information be obtained from the public schools, or sought unwisely in the brazen advertisements of magazine originators of new systems of physical training or in the rash and not disinterested advice of advocates of new breakfast foods?"

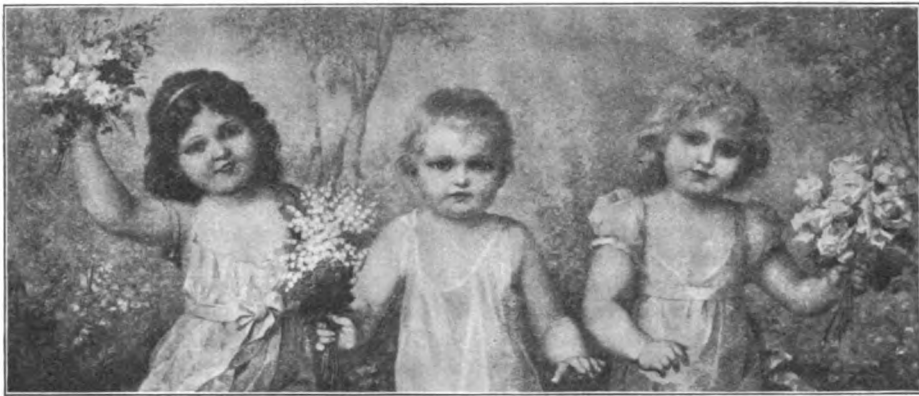
The hygiene of the family, of the community, of states, and of nations each has a place in our preparation for sound private and public life, and, therefore, in the public school, where the great majority of our householders, housekeepers and heads of families receive all their education. "The principles underlying household

or domestic hygiene and sanitation, therefore, claim some consideration at their hands.

"These would include such questions as the proper site of the house, the value of fireplaces as ventilators, the importance of wall papers free from arsenic, the advantages of bare floors and simple rugs as compared with carpets difficult to clean, the importance of a pure and abundant water supply, the desirability of prompt removal of wastes by drainage and such other devices for rural communities as may be made most sanitary under the circumstances, the dangers of damp cellars with the reasons why cellar dwellings have so often been prohibited by law, the dangers of illuminating gas, especially the modern so-called 'water gas,' the need of careful consideration and frequent inspection of gas fixtures to avoid small but dangerous leaks, and other similar matters bearing directly or indirectly upon the welfare

play-grounds and gymnasias; of public lavatories, water-closets and wash houses; of smoke abatement and noise suppression; something regarding clean streets and the thoughtless scattering of papers, banana skins, and the like rubbish which necessitates a costly scavenging; something regarding pure ice, and especially pure milk—problems in the solution of which all classes of the community must eventually take an active interest and participation, if reform is to come.

"And, finally, room should be found for a brief explanation of quarantine, its advantages and disadvantages; the isolation of cases of infectious disease, and the reason why it is so essential, though so inconvenient; the necessity for public hospitals for contagious diseases, and for municipal or state sanatoria for tuberculosis; the fundamental problems of international hygiene; food inspection such as that conducted



"Where the blooming roses grow,
In a joyful company, we the bursting flowers will see."

and sanitary condition of the home. Here might well be told the truth in regard to the advantages and disadvantages of cesspools and sewers and leaky or otherwise defective plumbing.

"Place should also be found, and might easily be made by the sacrifice of some osteology and histology, for a brief consideration of the health of communities, such as thickly settled neighborhoods, growing towns or cities; of the dangers attending impure water supplies and defective sewage systems, and the importance of methods for the sanitary removal and disposition of garbage, rubbish and the other wastes of life.

"Something might well be said regarding the need of proper municipal supervision of all these matters as the essential of a rational municipal sanitation, and of the sanitary value of good public service. Here also might be taken up the advantages and cost of municipal parks,

by the federal government for trichinosis in pork to be exported to foreign countries; diseased meat and other problems calling for intelligent co-operation of the citizens in national and international hygiene."

"We have, of course, to meet the important objection which will be urged against our point of view, namely, that desirable as all these things may be, the time available is too short for proper dealing with them. This, however, we deny. Time enough to do all these things, and to do them well, either is now or lately has been found in the public schools in the various courses for instruction in physiology and hygiene. It will be necessary, it is true, to revise and bring up to date our subject-matter and our methods of instruction. We must teach less about bone and sinew and more about muscle and nerve. We must teach less about anatomy and histology and more about the germ theory of disease, about polluted water and polluted

milk. We must simplify every statement and eliminate everything unimportant. We must not seek to make of physiology a training in the precision of measurements, or in scientific method, or in anatomy, or physiological chemistry. Some experiments must be made and demonstrations must abound; but we must keep steadily in view the practical object for which chiefly time is and long has been dedicated to physiology and hygiene—namely, the rational conduct of physical life.

REASONS FOR TEACHING TEMPERANCE

"The evil effects of the use of alcoholic drinks must be fully and clearly inculcated. The youth of America must be thoroughly informed of the insidious dangers which lurk about strong drink.

"Whether we are pleased with the fact or not, modern life has become more strenuous. In order to achieve success the individual must do more in a given time. Hence the urgent importance of a personal hygiene which shall really guide him in the proper care of the body. Meantime, the care of the public health has become one of the most important functions of government, and it will be increasingly important in the future. Its success in America must largely depend upon an enlightened citizenship to which it can look for support. We now teach history and economics and civics with some reference to the future life of the public school pupil as a citizen. Our teaching in hygiene should keep in view a similar end, and if this paper draws attention to the lamentable inadequacy of our present instruction for this purpose, our object in preparing it will have been largely accomplished."

So important a subject should be taught by teachers specially trained. But we rarely find as expert teachers in charge of these subjects as of languages, history, or mathematics. Often the least experienced teacher in the school has charge of physiology. All this must be changed in some way. The work might well be combined with the instruction in physical training. Both subjects would gain in effectiveness by this union. It would, indeed, require broader and better preparation on the part of our teachers of physical training; but this is an argument in its favor.

"The subject is one which profoundly affects social conditions and is closely related to a more intelligent individual and social American life."

—Abstract of a paper read May 16, 1903, before the American Social Science Association. From *School Science* for February, 1904.

"When April steps aside for May,
Like diamonds all the rain-drops glisten.
Fresh violets open every day;
To some new bird each hour we listen."

THE JOY MONTH OF THE YEAR

BY JOHN BURROUGHS

When grosbeaks show a damask rose
Amid the cherry-blossoms white,
And early robin's nests disclose
To loving eyes a joyous sight;

When columbines like living coals
Are gleaming 'gainst the lichened rocks,
And at the foot of mossy boles
Are young anemones in flocks;

When ginger-root beneath twin leaves
Conceals its dusky floral bell,
And showy orchid shyly weaves
In humid nook its fragrant spell;

When dandelion's coin of gold
Anew is minted on the lawn,
And maple trees their fringe unfold,
While warblers storm the groves at dawn;—

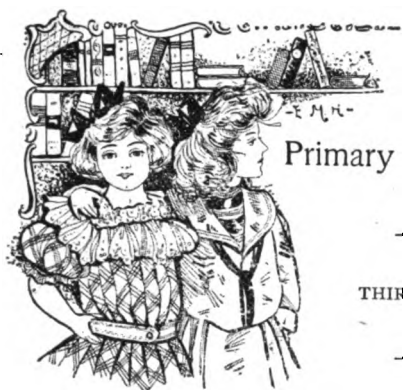
When these and more greet eye and ear,
Then strike thy tasks and come away:
It is the joy-month of the year,
And onward sweeps the tide of May.

—*The Century*.

A NON-ALCOHOLIC CANTEEN

The evidence that has accumulated as to the advantages of total abstinence in army campaigns has not escaped the vigilant eye of the German Emperor. The Kaiser, it is said, has been carrying on experiments at various army posts, especially at Nuremberg, where the canteens have not been allowed to sell anything but tea and coffee and lemonade. It is said that there has not been a single protest from the rank and file, though this may perhaps be accounted for by the recent revelations as to the relation of the German "Tommy Atkins" to his superior officers.

However, the results have been markedly satisfactory, and it is said that in the near future the issues of beer and brandy as part of the army rations will be abolished throughout the German Empire. When will our hide-bound army officials adopt this sensible plan and increase the efficiency of the army, as well as its respectability. The experience of the American Navy, which abolished the rum-ration years ago, ought by this time to have led to a similar reform in our own navy.—*British Medical Temperance Review*.



Primary Lessons

THIRD YEAR

THE BRAIN AND NERVES

UNTIL recent years, the bulk of the work done in the schoolroom was purely mental. Almost every exercise was planned to develop the memory or the reasoning powers, while little or no attention was paid to the training of the special senses and of the muscles.

All this has been changed since the advent of manual training schools and the general application of the principles of such schools to ordinary classroom work. The child of today learns to do at the same time that he learns to know, and his mental growth instead of being hindered is actually more rapid than before.

Joint education of the physical and mental powers is in line with natural instincts. Ideas call for expression rather than repression, and if a proper outlet is not provided for the awakened energies of the child they will cut their own channel, often to his personal injury and to the demoralization of the school.

Self-control is thus one of the most important lessons for the child to learn, affecting, as it does, not only his work in the schoolroom but his character as an individual and as a future citizen. Before he can understand what is meant by self-control, he must know something of the brain and nerves and

(1)

THE WORK THEY DO

In receiving and sending messages to every part of the body. Then it is possible for him to realize his own responsibility in deciding what these messages shall be, and in so caring for these body messengers as to fit them to give only good service as long as he lives.

The child can not see either the brain or nerves. For this reason we must use some familiar illustration to explain how these parts of the body do their work. If embodied in story form, so much the better.

THE BODY UMPIRE

Gould had just come home from the ball game and was eager to tell Lois about it.

It was the first matched game he had ever seen, and he did not understand the different plays very well, nor even know just what all the men were doing, but he thought he knew all about the umpire because it was his own father.

"He told the rest of them what to do, and they just had to do it," he told Lois. "I'm going to be an umpire when I'm grown up, and make everybody mind me."

"You can be one now," said mamma who was passing through the room. "Indeed, you are one, whether you want to be or not, and you have quite as many orders to give and questions to settle as the umpire you saw today on the ball grounds."

"How can I be an umpire when there isn't anybody to mind me but Lois and Frank, and they won't?"

"Let me see if I can explain what I mean. Suppose Lois and Frank both call you at once to see something. They are in separate rooms and you can not go to them at the same time. That means that you have to be umpire and decide where you will go first.

"When you sit down to the dinner table, you have to decide what you will eat, and whether you will use knife or fork or spoon.

"You are running about or doing something almost every moment when you are awake, but your hands and feet would not move unless you told them where to go and what to do.

"There is one particular part of the body that we use whenever we have a question to decide. Do you know what part it is?"

"It is the head, isn't it?" asked Gould.

"Yes, a part of the head. It is the brain, the part we think with. It is really you that is the umpire in all these questions, because it is you that thinks and decides. But the brain is the part that you work with, and you could not think without it, so we sometimes call the brain the body umpire."

Stop the story at this point, and let the class name ways in which the brain acts as umpire for them every day.

Very few suggestions will make it plain to them that every game they play, every bit of work they do, and all conscious movements they make with any part of the body are possible only because they have a brain with which they can give the necessary orders.

THE BODY MESSENGERS

How do we find out about things?

How did Gould know when Lois and Frank called him? How do we know when dinner is

ready to be eaten? or that a ball game is going on? or that roses are in blossom in the garden?

Ask other questions, bringing out the action of the different senses, until all understand that we have five ways of finding out what is going on, and that each of the five senses tells us something new and thus gives us questions which we have to decide with the help of the brain as umpire.

When we see or hear anything, or touch it, how does the news get from our eyes or ears or hand to the brain shut up inside the head?

Use the familiar illustration of the telegraph in explaining this puzzling question.

If we want to talk to a friend in another town or state, we send him a telegram, and the wires carry the message.

There is an arrangement something like this in the body. Little white cords, most of them too small to be seen, connect the brain with every other part, just as telegraph wires connect one city with other cities.

These tiny white cords are our nerves. We might almost call them the messenger boys of the body, because they carry messages of everything we find out to the brain.

When you see a bird on the fence, the nerves of sight carry a message about it to the brain.

When you hear some one playing on the piano, it is because the nerves of sound have carried that message to the brain.

When you pick up a snow ball, the nerves of touch carry the message. They tell you that it is snow, and that it is soft and cold.

There are so many of these nerve messengers in our bodies, and they are so close together that you can not touch any part of you without a message going at once to the brain about it. Try this and see for yourselves.

Perhaps you know that people can send a telegram and get an answer over the same wire.

Messages are not sent in that way over these body wires. There is always one set of nerves to carry messages to the brain, and another set to take back the answers; so there is never any danger that the two kinds of messages will get mixed up.

The nerves that carry messages from our senses to the brain are the nerves of sense.

The nerves that carry back an answer from the brain to the different parts of the body, telling them what to do, and how to do it are the nerves of motion.

What kind of nerves carries the message when you see a horse running away?

What kind of nerves carries the message that tells your legs to get you out of his path as quickly as they can?

Ask as many similar questions as time allows. The exercise should be continued, however, until all in the class know the difference between work done by the nerves of sense and the nerves of motion. It is a good plan to vary the exercise occasionally by allowing the children to think of questions as well as give answers.

(2)

FORMING GOOD HABITS

What kind of a man do ball players want for their umpire?

Boys, if not girls, will have pretty good ideas on this point. Give them full opportunity to express their opinions, then sum up briefly the different qualifications brought out.

First of all, an umpire must be fair. He must be quick to see everything that goes on, and to decide which side is right. He must always keep cool himself, no matter how excited others get.

This is just the kind of an umpire we want the brain to be for us, and the best of it is that it will be if we give it the right kind of training.

How shall we go to work to train the brain? To begin with, it must be strong and healthy.

It is part of our bodies, so it needs the same things to make it grow that our arms and legs need. What are some of these things?

Let the children name foods that one needs to make him grow. How can we be sure of getting pure air to breathe in the daytime? at night? Name six games that are good for the body. Name six kinds of work that children can do.

All these things will help to give one a healthy body and a strong brain. And they are just as good for the little nerve messengers that carry our messages back and forth as they are for the brain umpire that sends them.

Your fathers will tell you that a good trainer will take a colt and make a good horse of him, while a bad trainer would make a bad horse out of the same colt.

We are the trainers of the brain and nerves. They do nothing but obey our orders, so we must be very careful what we tell them to do.

At first they do their work very slowly. When the message goes from a baby's brain to his feet telling them to walk across the room, they obey as well as they can, but very likely he will fall down two or three times before he gets there. Your brain and nerves have taken such messages so many times that they can handle them very quickly. You can walk or run wherever you like.

When a person has done a thing so many times that he can do it very easily, we say it is a habit.

Name some habits that you have formed.

Name things that you would like to do well enough to have them become habits.

How can you form the habit of saving money? of being polite? of being on time? of getting your lessons? of telling the truth?

(3)

FORMING BAD HABITS

There were a good many mice in Rob's home, and one night he set a trap for them.

It was well baited with cheese and, sure enough, by morning he had caught one, a fat old fellow.

He called Betty to see the prisoner, and Muff, the cat, came too.

Betty held Muff up for a look at the mouse, and the cat tried hard to get her paws on the cage.*

She would have made short work of poor mouse if she had succeeded, but fortunately mother came in just then and took the cage away.

"It isn't right to put temptation before any one," she told the children, "even if it is only a cat."

"What is a temptation?" asked Rob.

"It is anything that makes us want to do what we ought not to do."

"It was a temptation to you to smoke when you found a package of cigarettes yesterday. I am glad you were strong enough to resist it.

"Every time you refuse when you are tempted to do wrong, it will help you to do right next time. But if you yield even once it will be easier to do so again, and almost before you know it you will have a bad habit when you might have formed a good one instead."

After telling this story to the class, take the opportunity to call attention to whatever bad habits your pupils are most in danger of falling into.

In most cases, cigarette smoking will be one such habit. In some localities, wine or beer drinking is an additional temptation that even young children have to meet.

Even if there is no drinking or smoking in the home, few children escape the constant

temptations, of the street and of bad companions, and hence should know how and why such habits are harmful and to be avoided.

Give them in very simple form the facts brought out in the authoritative quotations that follow this lesson: viz., that all such things hurt the brain and nerves, keep one from thinking or acting quickly and correctly, lessen self-control, and often help to make one dishonest, untruthful, and weak in body and mind.

Above all, impress upon the children the fact that everything they do helps to form some kind of a habit. The brain and nerves are always at work when we are awake, and the only way that

we can keep them from forming bad habits is to see that the brain gives only good orders to our bodies, and that the nerves carry only right messages.

AUTHORITATIVE QUOTATIONS

ALCOHOL RETARDS BRAIN ACTION

Before the adult age is reached, the brain is peculiarly susceptible to the action of stimuli, either mental or of so-called stimulants, and as alcohol is a poison primarily, and almost exclusively, affecting the brain, we think that its effect upon the child is much the same as upon protoplasm. . . . Thus upon the brain of a child it retards its action and finally stops it altogether. —*British Temperance Record*.

Liquor always hurts.

There is no harmless minimum dose. Even the most moderate drinker in the world thinks slower than he ought to do according to his intellectual make-up.—A. FOREL, M. D., Leipsig.

It takes longer for a person who has had a small quantity of alcohol to think. Alcohol causes not only a loss of time in mental processes, but a loss of ability. The most eminent German scientists are coming to the front with warnings as to the danger of using alcohol in even small quantities.—EMIL KRAEPLIN, M. D., Professor of Psychiatry in the University of Heidelberg.

*See illustration on page 141.



ready to be eaten? or that a ball game is going on? or that roses are in blossom in the garden?

Ask other questions, bringing out the action of the different senses, until all understand that we have five ways of finding out what is going on, and that each of the five senses tells us something new and thus gives us questions which we have to decide with the help of the brain as umpire.

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What kind of nerves carries the message when you see a horse running away?

What kind of nerves carries the message that tells your legs to get you out of his path as quickly as they can?

Ask as many similar questions as time allows. The exercise should be continued, however, until all in the class know the difference between work done by the nerves of sense and the nerves of motion. It is a good plan to vary the exercise occasionally by allowing the children to think of questions as well as give answers.

(2)

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How shall we go to work to train the brain? To begin with, it must be strong and healthy.

It is part of our bodies, so it needs the same things to make it grow that our arms and legs need. What are some of these things?

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When a person has done something so many times that he can do it very easily, it becomes a habit.

Name some habits that

Name things that you would like to do enough to have them become habits.

How can you turn the habit of getting ready for your lessons? of being polite? of being neat? of doing your lessons? of being kind?

THE CAT

There were a great many cats in the home, and one night a cat came to the door.

It was well known that the cat was old enough to be a grandfather to the old fellow.

He called Betty to see the prisoner, and when the cat came too.

Betty held Muff up for a look at the mouse, and the cat tried hard to get her news on the page.

She would have made short work of poor Muff if she had succeeded. Fortunately mother came in just then and took the cat away.

"It isn't worth the temptation before any one," she told the children, "even if it is only a cat."

"What is a temptation?" asked Kot.

"It is anything that makes us want to do what we ought not to do."

"It was a temptation for you to smoke when you found a package of cigarettes yesterday. I am glad you were strong enough to resist it."

"Every time you resist when you are tempted to do wrong, it will be easier to do right next time. Once it will be easier before you know it, and you might have found



After telling the story, opportunity to turn bad habits your temptations into

ALCOHOL LESSENS SELF-CONTROL

People imagine they can do things more quickly, that they are brisker and sharper, but exact measurement proves that they are slower and less acute. Men believe that they are wise and bright, but their sayings are more automatic and apt to be profane. To quote Dr. Lauder Brunton, "It produces progressive paralysis of the judgment," and this begins with the first glass. Men say and do, even after a single glass of drink what they would not say or do without it, and therefore it clearly affects the brain and diminishes self-control.—G. SIMS WOODHEAD, M. D., University of Cambridge.

ALCOHOL PAVES THE WAY FOR CRIME

Recent studies make clear the fact that crime in all persons who drink comes largely from the numbing or anæsthetic effects of alcohol. Thus alcohol prepares the ground for crime and makes it possible for the man or woman to do wrong. This comes from the dulling and stupefying action on the higher brain. The man or woman using alcohol is less honest, less moral, less truthful, and altogether lowered in every way. The senses are dulled with every glass of spirits. They can not see, hear, feel or think so quickly or accurately.—T. D. CROTHERS, M. D., Professor Nervous Diseases, New York School of Clinical Medicine.

TOBACCO DESTROYS A BOY'S ABILITY TO STUDY

Tobacco used in any form destroys a boy's ability to apply himself to study, and prevents his comprehending or remembering his lessons.—H. H. SEERLEY, Principal Iowa State Normal School.

CIGARETTES INJURIOUS TO THE MENTAL FACULTIES

The use of cigarettes or tobacco in any form is injurious to the mental and moral faculties of any individual, and especially so to the young.—M. S. MACDONALD, M. D., Quebec.

No tobacco user ever has the supremest use of his brain.—E. H. DEWEY.

The fact that no man has ever reached his best mentally who is addicted to the tobacco habit is a sufficient commentary on its action on the mind.—C. H. ST. JOHN, M. D.

CIGARETTES DESTROY THE MORAL NATURE

If there were nothing more harmful than the associations generally formed by the young boy

beginning with his first cigarette, that alone would often prove his downfall. He realizes that he must take his first smoke in secret, and to do this he generally finds companions who are victims to the habit and who have already taken the first downward step. For this reason he not only becomes deceitful, but is taught to lie by those who are already dashing headlong to destruction. It does not take much foresight to predict the end of a boy whose career is thus begun, unless he is arrested in his thoughtless and mad race toward the prison door. I say "thoughtless" because in the boy of fifteen and younger it is thoughtless, as reason and judgment have not assumed control in his immature mind.

But the most harmful effect is not alone from bad companions. I assert, unhesitatingly and without fear of successful contradiction, that the use of cigarettes affects the nervous system, weakening the will power and destroying the ability of the boy to resist temptation. Because of this he easily falls a victim to those habits which not only destroy the body, mind, and soul, but irresistibly lead him into violation of the laws of the state.—HON. GEORGE TORRANCE, Supt. Illinois State Reformatory.

I recently saw an account of a Bond and Security Company which had losses to pay on seven hundred young men who had gone wrong. This company made careful inquiry as to the lives and habits of these young men, and this alarming fact was revealed: that every single one of the young men smoked cigarettes. What a lesson to boys!—HON. C. H. MEBANE, State Supt. Public Instruction, N. C.

CIGARETTES A HANDICAP FOR LIFE

In order that one be at his maximum efficiency—that he be able to do his best—the body must be kept in a clean, healthful, normal condition. The use of tobacco is both unclean and unhealthful, and the boy or the young man who forms the habit of using it is handicapped for life. The fight for a clear brain is a splendid, heaven-born battle, and I admire the boy or the young man who bravely takes up the struggle, and keeps himself unspotted from the world. Such a one is bound to succeed, for he that ruleth his own spirit (himself) is greater than he who taketh a city.

The conquering of self is the grandest battle of life. The boy or the man who permits the tobacco habit to fasten itself upon him is not wholly free; he is in part slave.—ARTHUR E. HAYNES, Professor Engineering Mathematics, University of Minnesota.

THE MEDICAL PETITION FOR TEMPERANCE EDUCATION

THE enormous response to the medical petition in favor of the compulsory teaching of hygiene and the principles of temperance in the schools of Great Britain speaks well for the profession. Up to date 14,250 signatures have been received, a great number accompanied with expressions of hearty approval, and earnest wishes to help forward the movement locally, or in any other way, by bringing the subject before the attention of the local education authorities, chairmen of city councils, etc.

Some of the letters were very pathetic, as the writers saw clearly that such teaching would mean so much less illness, and consequently less need for medical care and treatment, that incomes would be seriously cut down.

As regards this point, says the *Medical Temperance Review*, this argument, cogent as it appears at first sight, does not seem sound economics. To my mind, doctors will share in any general increase of welfare and prosperity. . .

But these very letters are perhaps the most striking testimony to the fact that the condition of thousands in this country is due to preventable causes.

We of the British Medical Temperance Association know well the place that is taken by one of the factors mentioned in the petition as needing to be dealt with. We know the enormous amount of degeneration and disease due to the consumption of alcohol, and also that there is still very widespread ignorance as to the harm it produces, slowly perhaps, but inevitably, when taken "in perfect moderation" as the customary beverage.—*Alliance News*.

CONVERTED BEER DRINKERS

Temperance work in the German army is something of a novelty, but an experiment made by Captain Schutz, of the 14th Bavarian Infan-

try Regiment at Nuremberg, has been so brilliantly successful that arrangements have been made for its extension to other regiments.

Captain Schutz, bent upon combating the consumption of alcohol in his corps, obtained the necessary permission from his colonel, and installed near the canteen a small but completely-equipped apparatus for the manufacture of soda water, lemonade, and other temperance beverages, which were sold at a halfpenny and a penny per bottle.

During the first year the soldiers consumed over thirty thousand bottles of these harmless drinks, and for the first month of the second year the sales showed an increase of 8,400 bottles on the corresponding period of the preceding twelve months, thanks to a reduction of nearly 50 per cent. in the price.

Not only have the financial results been admirable, but the soldiers in Captain Schutz's regiment are noticeably fresher and more attentive at the instruction classes than they were formerly when they drank beer at midday. It is instructive to note that the consumption of beer during the first year of the temperance bar fell off by 1,000 gallons.—*London Daily Mail*.



"Now the fields are full of blossoms,
And the birds are all in tune;
They rehearse among the treetops
For the madrigals of June."

Two little children sat looking at the stars. Presently one of the little fellows turned to the other and said: "Wasn't God a nice

man to give us the stars for a light?"

"Oh, Teddy, how can you say such a thing?" said the other boy, much shocked. "You shouldn't call God a man. It ever there was a gentleman, He's one!"—*Journal of Education*.

"Up with me, up with me, into the clouds!
For thy song, lark, is strong;
Up with me, up with me into the clouds!
Singing, singing,
With all the heavens about thee ringing,
Lift me, guide me, till I find
That spot which seems so to thy mind."

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"Open the door, let in the air;
The winds are sweet; and the flowers are fair.
Joy is abroad in the world to-day;
If our door is wide, it may come this way.
Open the door!"

A VERBAL NOT A REAL DIFFERENCE

WHATEVER has brought freedom from error to the people was in the beginning called heresy. The gradual adoption of such so-called heresy by its opposers until they have claimed to be its authors was well voiced by Max Müller when he said, "The reformer must keep saying the same thing over and over, and by and by the people will say it too and claim that they said it first." We are reminded of this by an article in the February *School Science*, extracts from which are reprinted in this number of the JOURNAL.

In that article is described in detail the study of physiology, popularly termed Scientific Temperance, which is now a mandatory study in the public schools of this entire nation. The authors of the paper approve the salient features of this study and insist that time should be taken for such physiology and hygiene as are necessary to "the rational conduct of physical life."

At the same time, it is well known that these writers have publicly insisted "upon relief from the incubus of 'scientific temperance' instruction, so called, which has so long rested upon the teaching of physiology and hygiene, winding its tentacles about it, octopus-like, sapping its strength and crushing out its usefulness."

In spite of this fact, however, they here assert that "the evil effects of the use of alcoholic drinks must be fully and clearly inculcated."

What shall we say of the intelligence of these writers concerning the subject of which they write?

The teaching of physiology and hygiene, including the evil effects of the use of alcoholic drinks which they so heartily advocate, is nothing more nor less than what is now being given

in our schools, and what is insisted upon by those whom they call reformers.

In the first place, before they began to discuss the topic publicly, they should have found out that the words, Scientific Temperance, are only a popular term for this study. It was first used in the seventies in England to describe the physiological reasons for total abstinence as shown by the scientific investigations of Sir Benjamin Ward Richardson, M. D., LL. D., as to the nature of alcoholic drinks and their effects upon the human system. Scientific Temperance in our country is used to designate a department of effort which seeks so to guide the formation of right physical habits in the individual that these habits will reach and influence not only the individual but the home, the community, and the nation, by the early dissemination, through the public schools, of knowledge of the physiological reasons for obeying the laws of health, including those which relate to the use of alcoholic drinks and other narcotics.

Whoever will read the literature of this department, published during the past twenty years, its courses of study, its indorsed text-books for all grades, and the laws which require this study for the pupils in all schools in all this country, will see that what Professors Sedgwick and Hough think should be taught, as shown in their article, is what is now being taught in the schools, not perfectly, but each year in a better way and with increasingly good results.

Evidently it is only the name, Scientific Temperance Instruction, which is "the incubus," the "octopus" from which they seek relief. They should feel relieved to find that it is only a name of a department of educational effort in a philanthropic society that has scared them so badly. It does not occur in the laws that require this study, nor in its indorsed text-books, nor in its courses of study. The "octopus," Scientific Temperance Instruction, of which the critics complain, is "winding its tentacles" in their imagination only.

These critics say, after objecting to an excess of anatomical teaching in the public schools, "The course of study in physiology should impart enough facts of structure and function to furnish a solid basis for sound teaching in hygiene." The advocates of this study have been saying for twenty years that "the public school study of this subject should include physiology (structure and function) enough to make hygiene, including that concerning alcoholic drinks and other narcotics, intelligible." As to what facts of hygiene should be taught we do not seem to differ. They do not raise objections to the children being warned against other narcotics, such as tobacco, hence we conclude that

their silence in this matter means consent to such teaching.

At one point, however, we do seem to differ, but the difference is apparently one of arrangement only. Both the critics and the advocates of the study agree that the pupil should know, for instance, something of the structure and function of the brain as the center of the nervous system, as well as its relation to the other organs of the body in order that he may understand the effect on the same of good or bad air, of sleep or its lack, of good or insufficient food, of alcohol and like narcotic poisons.

Extended observation of the results of the two methods, of having such hygiene follow the description of the organ, or of its being massed with other hygienic facts out of connection with the description of the structure and function of the organ, has led to the positive conviction that the first method, which is that in general use, is the logical and therefore the most effective way of teaching these subjects, especially for the immature mind of public school pupils. For the same reason, the best laws on this subject wisely demand that the effects of alcohol on the human system shall be taught in connection with each division of the subject of physiology and hygiene.

On the important point of warning against alcoholic drinks there is no difference of opinion, if one may judge from the critics' own language given below, opposite the language used in the laws to describe the study.

WHAT THE CRITICS WOULD HAVE TAUGHT

The evil effects of the use of alcoholic drinks must be fully and clearly inculcated. The youth of America must be thoroughly informed of the insidious dangers which lurk about strong drink. But, on the other hand, we must never forget that the public schools are no place for

WHAT THE LAWS REQUIRE TO BE TAUGHT

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the nature of alcoholic drinks and other narcotics, and special instruction as to their effects upon the human system, in connection with the several divisions

any propaganda and that freedom of teaching must not be surrendered even to reformers.

of the subject of physiology and hygiene, shall be studied and taught as thoroughly and in the same manner as are other like required branches in said schools, by all pupils in all said schools.

From this contrast the reader will see that if either must be classed as propagandists it is the critics who prejudice the question as to *what* the youth of America shall be taught that the effects of alcoholic drinks are. They designate these effects in advance as "evil," while those who petitioned for and have influenced the shaping of the legislation which makes this

study mandatory have simply asked that the law require the nature and effects of alcoholic drinks and other narcotics to be taught, leaving it to be decided by the forum of public opinion what such nature and effects are. Organized public opinion in the form of Committees of citizens, the Scientific Department of the Woman's Christian Temperance Union, and the Text-Book Committee of the Advisory Board of the same made up of scientific men, are not propagandists, but representative vigilance committees who are constantly searching for the latest truth on this subject, who scrutinize every claim to see if it be true, and who watch to see that truth and only truth shall get to the children through the



" 'Tis springtime on the eastern hills
Like torrents gush the summer rills;
And from its sunned and sheltered nooks
The blue eye of the violet looks."

school text-books and otherwise.

What the critics call "the freedom of teaching," in so far as it relates to the matter taught, if such matter can not be defended by unprejudiced scientific authority, will never be allowed to pass unchallenged by these representatives of the American people, responsible as they are for this form of education which bears a vital relation to the physique and morale of the nation.

"Look up and be glad, is the law of spring,
And, as flowers grow under last year's leaves,
New hopes arise in the heart that grieves
Over the grave of a gladness dead,
And the soul that sorrowed is comforted."



Grammar Lessons

SEVENTH OR
EIGHTH YEAR

ALCOHOLIC DRINKS

IF there are two fallacies which, more than others, seem to have found lodgment in the popular mind in connection with the use of alcoholic drinks, they are

First, that the use of these drinks bears no relation to their abuse.

Second, that homemade beers and wines contain no alcohol, because none has been added in the making.

Nearly every moderate drinker firmly believes that there is an impassable gulf between his occasional glass of wine or beer, which he can take or not as he chooses, and the uncontrollable craving for intoxicating liquor that holds the drunkard in relentless grasp.

He is seemingly blind to the fact that every drunkard is recruited from the ranks of just such moderate drinkers as he boasts himself to be, and that no man ever did or could take the glass too much who had not previously drunk the first, so-called harmless glass.

The anomaly is equally great when women of marked intelligence in other respects urge upon guests and use freely in their own families, as non-alcoholic and harmless, liquors which they themselves have made, regardless of the fact as indisputable as any in mathematics that yeast can not be added to a sweetened liquid and the other fermentative conditions supplied without alcohol being formed.

So long as such widespread ignorance prevails among cultured people, it is idle to imagine that a better state of affairs exists among the ignorant. Outside of the few scholars who have specially investigated the subject, anything like general intelligence in these matters so vital to individual and national wellbeing is to be found only among those public school pupils who have been thoroughly instructed in the nature and results of fermentation.

But even in schools where the best instruction has prevailed in the past there must be no relaxing of effort, for new pupils appear with each

succeeding term as ignorant and as much in need of this knowledge as any who have preceded them. It is as true now as in the days of Cicero that "a mind without instruction can no more bear fruit than can a field, however fertile, without cultivation."

The individual teacher may not reform the world in these matters, but she can make her own school a little center of knowledge which shall help to enlighten the community whose influence in turn may be proportionately far reaching.

Before taking up in class the special subject of alcoholic fermentation, some time should be given to a survey of the changes that are continually taking place in animal and vegetable matter. These changes may all be grouped under the general heading

THE WORK OF MICRO-ORGANISMS

One of the things that costs every family a great deal of money each year is food. What becomes of all the meat and vegetables and fruits that are constantly being brought into our houses?

Most of this food is eaten to build up and repair our bodies and give us the strength we need. But even what we do not eat does not last very long. It rots or sours or molds or spoils in some way. Why does this happen?

No one would know if it were not for the microscope. That shows that every bit of mold or decay is really caused by countless numbers of very tiny plants, some of which are constantly floating in the air.

These plants have no roots or leaves and are almost colorless, so would not look at all like the plants in our gardens even if they were of the same size. But they live and grow and form new plants just as truly as do any others. Indeed, they multiply so fast that they very soon eat up or destroy whatever food they fasten upon.

There are many different kinds of these little plants, as we may know from the different ways in which they affect food. Molds destroy, in time, whatever they attack. The bacteria that cause meat and fruit and vegetables to decay, not only destroy the food value of these substances but leave very unpleasant odors behind. The yeast plants help to make bread light and wholesome, but they also change sweet fruit juices into the alcoholic liquors that bring so much misery into the world.

We need to know something of the way in which these different kinds of plants do their work, in order to keep our food sweet and wholesome and to make it last as long as possible.

Let the individual members of the class make their own investigations on these points by ex-

periments at home. In this way they can find under what conditions food molds most rapidly, and thus whether it is better to keep it in a warm or cool place, and in the dark or the light; why fruits will keep after being boiled in sirup and sealed up, when they soon mold and spoil after the can has once been opened; why some fruits are dried and others are salted or frozen; how meats will keep best; where vegetables should be stored; why fruits are often packed in sawdust or closely wrapped in paper; and why no bits of food that have begun to decay in any manner should be allowed to remain in the house or yard.

Give as much time as possible to these and similar questions which have so important a bearing on health and the family pocketbook.

Encourage the class to consult parents, grocers, and other dealers in food, as far as they have opportunity, as to the best ways of preserving different kinds of food and of keeping it from decay.

CONDITIONS OF ALCOHOLIC FER- MENTATION

Refer the class to their physiologies for a description of alcoholic fermentation, after explaining that by this is meant the process by which alcohol is formed in sweet liquids.

State clearly beforehand, perhaps in the form of questions, the various points which they should take up in this study. For instance, they should find:

What is the special kind of micro-organisms that forms alcohol in sweet liquids? What else besides alcohol is formed at the same time? What becomes of this gas? What becomes of the alcohol?

Where do the yeast plants come from that cause fruit juices to ferment? At what temperature do they work most rapidly? What temperature will stop the growth of yeast plants? Do yeast plants grow faster in the dark or the light? Why will a sweet liquid ferment when dry sugar will not? Why will jellies and thick preserves mold, but not ferment?

Where does the yeast come from that is used in making beer and bread? Why is made yeast used in these processes instead of the yeast plants that are found floating in the air? Where does the sugar come from in these cases?

After the conditions upon which alcoholic fermentation depend are thoroughly understood, bring out clearly the distinction between the use of yeast in bread-making and beer-making.

In both yeast is added, and in both fermentation takes place and alcohol is formed. Why then is not bread as harmful as beer? This is a natural question and should be answered to the pupil's entire satisfaction. Physiologies for these grades will be one source of information, but the teacher should be prepared to give additional help if necessary.

Make sure that the class understand that in bread-making the product of fermentation that is wanted is the carbon dioxide gas which puffs the bread up and makes it light and sweet, while the alcohol is all driven off by the heat of the oven in baking. In beer-making much of this gas escapes into the air, while the alcohol remains behind, dissolved in



"Betty held Muff up for a look at the mouse."

the liquid.

THE DANGER IN HOMEMADE LIQUORS

As long as so many good people honestly believe that homemade wines, root beers, and the like contain no alcohol, because made from recipes that do not mention the word, it is all important that the schools counteract this false notion by teaching the facts in the case.

Review again the necessary conditions under which alcoholic fermentation takes place—, yeast, added to a thin, sweet liquor, and a warm temperature—, making sure that every pupil understands that when these conditions are present alcohol is always formed.

To find out, then, whether there is alcohol in any homemade drink, all that is necessary is to know whether these conditions have been complied with.

*See Primary Lessons page 136.

All recipes for beer, including root beers, call for yeast to be added to the other ingredients, and state that the liquid should be left in a warm place. This means that alcohol will always be formed in such beer.

In the case of any kind of wine or cider, yeast is not usually added, but the other conditions are present, and some of the yeast plants that are always floating in the air are sure to fall into these uncovered juices and there cause alcoholic fermentation, sometimes in a few hours.

The sure test which shows that alcohol is being formed in such liquor is the bubbles of gas which will be seen rising through it. A froth then soon collects on top and a sediment finally falls to the bottom. The alcohol is colorless and hence can not be seen, but it is always there mixed with the liquid.

THE ALCOHOLIC APPETITE

Even after learning that all homemade beers and wines contain alcohol, the youth who sees and knows that such drinks are used freely by many people wonders where the harm lies, and why he may not take a glass or two when he feels like it. This is the next important question for class study.

To answer it one must know the nature of alcohol wherever found. The class will find on referring to their books that alcohol is a narcotic poison. Let them study the meaning of both these words as given in their physiologies and dictionaries, remembering that the nature of alcohol is the same wherever found, and whether in large or small quantities.

Liquors containing only a little alcohol may not do so much harm at the time as those which are very strong in alcohol, but just because they are weaker one is likely to drink much more of them. In this way one who drinks three glasses of beer will take as much alcohol into his system as a man who drinks only one glass of a liquor that is three times as strong.

But the great danger lies in the fact that even one glass of any alcoholic liquor may lead the drinker to form a habit that he can never shake off.

If a person wants to make a fire, he does not light a match and hold it against a log of wood. He lights paper or shavings first, then adds kindling wood, and finally large sticks.

In the same way, nobody begins to drink by taking brandy or whisky. He starts with cider or beer or wine, and thinks he will never take anything stronger. He does not know that even the little alcohol in these light drinks is the kindler of an appetite that may grow until it masters self control and demands ever increasing gratification.

This has been the history of every drunkard in the past, and no one who takes the first drink can be sure that history will not repeat itself in his case.

AUTHORITATIVE QUOTATIONS

ALCOHOLIC FERMENTATION

The essential phenomena of [alcoholic] fermentation are the destruction of sugar and the production from it of two other substances. . . . One of these, alcohol, is a liquid and remains in solution; the other, carbon dioxide, is a gas, and usually passes off from the solution in the form of bubbles. . . .

If the juice of an apple is squeezed from the pulp, it forms a sweet liquid which tastes at first almost exactly like the apple from which it was taken. But if it is allowed to stand in a warm place, a fermentation begins in it which rapidly changes its character, producing in a few hours what we call cider. . . . Since the yeast has not been planted consciously in the cider, the fermentation must be due to the wild yeasts which find their way into the juice, either before it has been squeezed from the apple pulp or afterwards. . . .

In a similar way, other spontaneously fermented products are made from the juice of various plants or fruits; for any sweet juice from such natural sources will be sure to become inoculated with wild yeast and will consequently undergo fermentation. . . . These wild yeasts are so sure to be present in the air that it is very difficult to protect a fermentable substance from their action unless the air is completely excluded.—H. W. CONN, Ph. D., Professor of Biology in Wesleyan University.

ALCOHOL HAS ONLY POISONOUS PROPERTIES

No substance is able to undertake the double role of a food and a poison, and for alcohol no nutritive, but only toxic properties can be claimed.—MAX KASSOWITZ, M. D., Professor of Physiology, University of Vienna.

ALCOHOL IN THE LIGHTER LIQUORS

Alcohol is the same whether in beer, wine, or whisky. If taken by any person in health, it is always injurious in direct proportion to the quantity taken and the length of time its use is continued.—*Bulletin American Medical Temperance Association.*

THE DRINK ITSELF AT FAULT

It is not the saloon, the canteen, or the man who sells, but the alcoholic beverage itself that insidiously and certainly poisons the blood, degenerates the brain, and sears the conscience of whoever uses it, in direct proportion to the quantity he uses.—N. S. DAVIS, M. D., LL. D., F. R. S.

ITS DELETERIOUS EFFECT ON THE SYSTEM

The continued use of alcohol as a beverage inevitably has a deleterious effect on the system, and is to that extent an abuse of health. The organs and systems of the body are not visible that we may become aware of the harm that is being done, but we must not think that what we do not see is non-existent.—DR. ADAM, in *British Medical Temperance Review*.

ITS DESTRUCTION OF HEALTH

Alcohol, whatever its form, even light beer or small wine, is a poison for the healthy child. From much use of alcoholic drinks, he becomes a drunkard and his health is gradually destroyed, his life shortened.

A short time ago I was in Vienna and talking to a great man there who made some statements about school children. He said, if you give a child a small quantity of alcohol it interferes with the normal processes of nutrition, excretion, and mental action, with the result that the child does not do his work properly.—G. SIMS WOODHEAD, M. D., F. R. S. E., Professor of Pathology, University of Cambridge, England.

ITS INJURY TO MENTAL POWER

Unquestionably, alcohol in every form, even as light beer or light wine, is poison for the healthy child. Older children, through spirituous drinks, lose mental as well as physical vigor. They become precocious, deficient in study, incapable. Their character is frequently depraved; once gentle and tractable, they become, through alcohol, irritable, excitable, unruly.—L. THOMAS, M. D., Professor in the University and Director of the Medical Polyclinic in the Hilda Child's Hospital, Freiburg.

To the physiologist there can be no uncertainty in this, that in early childhood, when the tissue elements of the brain are just about to be developed, even the smallest dose of alcoholic drinks works injuriously.—PROFESSOR A. FICK, of Würzburg.

Every man who, according to his own notions, is only a moderate drinker, places himself by this indulgence on a lower intellectual level and opposes the full and complete utilization of his intellectual powers.—JOHN J. ABEL, M. D., Johns Hopkins University.

AN INCENTIVE TO MORAL RUIN

Alcohol is a poison in every sense of the word, and it threatens to ruin us morally, mentally, and physically.—PROFESSOR BROUARDEL, Academy of Medicine, Paris.

THE SOCIAL EFFECT OF LIQUOR AND INTOXICATION

The social effect of wine and of beer, the mental enjoyment of society, is nothing else than intoxication of the brain.—AUGUST FOREL, M. D., University of Zurich.



"Under the greenwood tree who loves to lie with me,
And tune his merry note unto the sweet bird's throat,
Come hither, come hither, come hither!"*

SCIENCE WHOLLY
ON THE SIDE
OF TOTAL
ABSTINENCE

The dictum of science on the subject of moderate drinking is by no means ambiguous. Science does not support the plea that alcohol is a harmless, pleasant beverage. It can not support the plea of the moderate drinker that alcohol is an aid to health. But it does support the position of the

total abstainer with an emphasis which it is culpable to disregard. It shows that the abstainer can do more and better work, live longer and be healthier than the moderate drinker. Science, in short, shows that the abstainer lives the normal life, while the moderate drinker lives the abnormal.—THOMAS EASTON, M. D., England.

ONE POISON DOES NOT COUNTERACT ANOTHER

A very common and dangerous fallacy is that the ill-effects of tainted water can be counteracted by wine and spirits. Sir Henry Thompson, F. R. C. S., in his book, *Food and Feeding*, writes: "No admixture of wine or spirit counteracts the poison in tainted water and makes it safe to drink, as people often delight to believe; but the simple process of boiling renders it perfectly harmless.—*British Medical Temperance Review*."

*Courtesy of the Boston and Maine Railroad.

BOOK NOTICES

THE HYGIENE OF THE SCHOOLROOM, by William F. Barry, M. D. Snow & Farnham, Providence.

The constantly increasing number of books on school hygiene, calling attention to glaring defects in almost every particular of physical development, is a sad commentary on the existing state of affairs in even enlightened communities. But, as an offset to discouragement, one has only to compare the widespread interest in such matters that is manifested today with the apathy and ignorance of a generation ago. In the single matter of heating and lighting the modern schoolroom is far and away superior to any of its predecessors, and, in cities, at least, regular medical inspection of pupils now occasions less surprise than its absence would do.

Dr. Barry's book is well in line with these new tendencies. Beginning with school buildings, he discusses briefly but clearly the selection of their proper site, construction, ventilation, equipment, and janitor service. After thus providing the environment, the health of the child is next considered; the avoidance of permanent eye, ear, and throat trouble by early examination, the prevention of contagious diseases, the special need of a nutritious diet during these years of growth, and suitable exercise and physical training. Each topic is treated simply and practically. Teachers, superintendents and school boards generally will find the book suggestive and valuable.

THE LIGHTING OF SCHOOLROOMS, by Stuart H. Rowe, Ph. D. \$1.00 net. Longmans, Green & Co. New York and London.

Thorough investigation has shown that poorly lighted schoolrooms do not exist because the mechanics of light is not adequately known, nor because it is impossible to solve the local problems involved in the proper construction of buildings. The sole reason is the ignorance or indifference of the average school board, often through motives of so-called economy. The remedy lies in such general education of the public on these matters as will compel a change for the better.

In this modest volume of eighty odd pages, the principles of lighting are stated, the ordinary difficulties met with in constructing a new building are anticipated, and instruction is given as to how each may be avoided. Best of all, because applicable to existing conditions, valuable hints are given as to the correction of poor lighting in old buildings, both through remodeling and by means of less expensive expedients, such as the readjusting of furniture, window shades and the like. Every suggestion is illustrated, and the treatment throughout is popular rather than technical.

FOOD AND COOKERY FOR THE SICK AND CONVALESCENT, by Fannie Merritt Farmer, author of the Boston Cooking School Cook Book, etc. Cloth. \$1.50 net. Little, Brown & Co. Boston.

The need of special preparation of foods to suit the capricious appetites of many children and invalids is well known, but most people lack the knowledge necessary to meet this need. Miss Farmer has done a real service by setting forth the principles governing the selection and preparation of food for this large class of people. The chapter on Infant Feeding is an admirable guide for the nurse as well as for the inexperienced mother. Hundreds of recipes, for the most part well chosen, are given, in many cases illustrated to show the preparation or arrangement of the dish in question. A large number of the recipes are individual and thus can be easily and quickly prepared. While advising against any use of alcohol by children, the author yet includes wine and other liquors in many recipes, regardless of the fact that such directions tend directly to popularize the use of the greatest enemy to the home. This is a serious blemish in an otherwise admirable work.

THE KING AND HIS WONDERFUL CASTLE, by a Schoolmaster. Public School Publishing Co. Bloomington, Ill.

Appearing first as a serial in *School and Home Education*, this story of the body is now reprinted in book form, in response to numerous requests from teachers. The human body is pictured as a castle. The materials of which it is made, its different rooms, and the servants with their various duties are described allegorically. The reader is then introduced to the King of the castle, with his friends and enemies. The story appeals to the child's love of impersonation, and primary and intermediate teachers will find it well adapted to supplement and enliven the regular work in physiology and hygiene.

THE DAISY

BY LILLIAN HOWARD CORT

The careful daisy every night
Folds up her snowy cap of white,
And ties her golden hair up too,
To keep it from the midnight dew.

But when the sun behind the hills
Peeps out, she smooths her dainty frills,
And, smiling in her fresh array,
She nods to him a bright "good day."

PHYSIOLOGY TOPICS FOR JUNE

Review work of all grades, covering the different topics taken up during the year.

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Anatomy, Physiology and Hygiene For High Schools. By Henry F. Hewes, M. D., Instructor in Physiological and Clinical Chemistry, Harvard University Medical School.
Price, \$1.00

With experimental work this book gives a connected outline of the processes which accomplish the maintenance of life in the body and of the rules of hygiene which it is necessary to follow in order to facilitate their harmonious action. Chapters are included upon the nature and action of bacteria in connection with infectious diseases, and also upon physical culture and gymnasium exercises.

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THE SCHOOL PHYSIOLOGY JOURNAL



• CONTENTS •

How to Live Long	145
Primary Lessons—Review Work—A Perfect Whole	148
Prizes in Temperance Physiology	151
Grammar Lessons—Review Work—The Parts that make the Whole	152
Editorials	154
Save the Boys	155
High School—Review Work—A Powerful Instrument	156
Book Notices	158
Temperance Instruction in Hungary	158
Index to Volume XIII	159

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VOL. XIII. NO. 10
JUNE, 1904

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School Physiology Journal

Vol. XIII

BOSTON, JUNE, 1904

No. 10

THE QUEEN OF THE YEAR

BY ETHELWYN WETHERALD

Before the green wheat turneth yellow,
Before green pears begin to mellow,
Before the green leaf reddeneth,
Before green grasses fade in death,
Before the green corn comes in ear,
Then is the keen time,
Then is the queen time,
Then is the green time of the year.

Before young thimble-berries thicken,
Before young grapes begin to quicken,
Before young robins flutter down,
Before young butternuts embrown,
Before young love has grown too dear,
Then are the long days,
Then are the song days,
Then are the young days of the year.

HOW TO LIVE LONG

BY ROGER S. TRACY, M. D.

THE human body is a self regulating apparatus of extraordinary efficiency. It takes in its own supplies automatically at first and partly so to the end, distributes them where they are most needed, makes its own repairs, gets rid of its own waste, regulates its own temperature, makes provision for accidents, stores up in fat times provision for lean ones, builds its own housing and makes extensions as required, and is altogether a marvel of what might almost be called intelligent automatism.

Unfortunately, this wonderful mechanism has a tenant who is constantly interfering with it in the performance of its functions; an ignorant tenant who insists on making it work when it should rest, and rest when it should work, on feeding it when it is groaning with surfeit and starving it when it is ravenous, on oiling it when it needs sand and sanding it when it needs oil,—and who behaves throughout in so bungling a manner that this admirable outfit is finally completely wrecked, its last act being the eviction of the unruly tenant and its own collapse. This we call death.

THE ENEMIES OF THE BODY

From the moment the infant starts out in life he is surrounded by enemies. The nature of some of these has become known of late years, and methods have been found by which their

malignancy can be offset or combated. Such are the various micro-organisms, which live like parasites in the body to which they have gained entrance, flourishing at the expense of their host.

The organism at birth is only partly formed, and has yet to go through a long period of growth and development. During this period, its energies are largely monopolized in the process of nutritive growth and there is too little surplus force to insure uniform success in conflicts with external noxious influences. Here art supplements nature, and the community protects the individual until he is able to look out for himself.

During all this time, the processes of growth, repair, and elimination of waste are very active, but when full maturity is once attained they slacken; henceforth maintenance of an equilibrium is all that is required. No surplus of food or drink is necessary, and if it be supplied it can not be disposed of to advantage, and must be cast aside as waste.

The solid waste of the body (the gaseous being eliminated chiefly through the lungs) is got rid of mainly through the skin, the intestinal canal, and the kidneys. The amount of waste material that can be disposed of by these organs is limited. They can look out for a certain amount and no more, and they must have their periods of rest or they will break down. Even that indefatigable worker, the heart, rests about half the time.

DANGERS OF IMPERFECT METABOLISM

The various tissue changes connected with nutrition and waste are comprehended by physiologists under the single term metabolism. Even normal metabolism results in the formation of products that are not only useless but injurious to the body, and it is the function of the skin, lungs, intestines, and the kidneys to bring about their expulsion. Imperfect metabolism leads to the retention not only of these normal waste products, but of other matters not wholly transformed, for the proper disposal of which there has been neither time nor capacity. These products accumulate in the body, an attempt being made to deposit them out of the way, where they will interfere as little as possible with the performance of the necessary functions of the organs which are trying with might and main to catch up with their work.

Such deposits of matter that the overworked excretory organs have been unable to eliminate occur in some situations where they are com-

paratively harmless, while in others their presence involves decay, mental and physical.

This is especially the case when deposits occur in the walls of the blood-vessels. Animal life depends upon the circulation of the blood. Anything that interferes with the elasticity of the walls of the blood-vessels and with the normal energy of the heart walls will interfere with the nutrition of every part of the body. All the physical energies will be weakened, the sensitiveness of the brain and the rest of the nervous system will be dulled, the activities of the digestive organs will be lessened, and all these degenerative conditions will react on one another until the entire machinery becomes so clogged and hopelessly interlocked that it stops, and an innumerable band of nature's scavengers invades the dismantled organism and speedily breaks it up into its original elements and carries it away.

In early life, the system is vigorous enough to rid itself of an over supply of food and drink with comparatively little disturbance, but with advancing years there is more and more difficulty in disposing of it. We know that many of the disabilities of age can be accounted for in great measure by the accumulation of foreign matter in the tissues; that premature old age is attended by hardening of the arteries; and that a green, vigorous, or late old age is marked by a postponement of this process. It is plain, then, that an excess of food and drink will tend to bring on old age prematurely and so will shorten life. Here is sufficient reason for moderation in the pleasures of the table and for the exercise of some sort of selection in the food and drink we use.

WHAT TO EAT

How shall one know what he shall eat and how much he shall eat?

The infant starts out in life with raw food. After he ceases to obtain nourishment directly from the mother, he shows so strong a predilection for raw food that no inconsiderable portion of the anxiety of a mother for her child is caused by this tendency. Children are notoriously fond of raw things—raw grains, the tender joints of grass, leaves, various roots and barks, raw fruit.

Assuming, then, that during the immensely long eras of the evolution of the human being from an inferior type, he ate his food raw because he had no fire, and that the period since the invention of fire has been too short comparatively to produce any essential change in these primitive appetites, we are in a position to form a reasonable conjecture as to the natural diet of man, viz., anything that is now palatable in its uncooked state.

A list of such articles would include an immense variety; fruits of all kinds, a long list of leaves, stalks, and roots of plants, nuts, many kinds of shell-fish (oysters, clams, etc.), honey, eggs, milk and its products. Raw meat (butcher's meat) seems to be absolutely repugnant to the human palate, unless under pressure of extreme hunger or when smoked, spiced, or otherwise disguised or flavored.

HOW MUCH TO EAT

So much for the quality of our food; now about the quantity. The tendency of mankind is unmistakably to overeating. The ease with which food can be obtained, and the perfection of the culinary art by which its toothsome-ness can be highly developed tempt us all to eat much more than we require for the bodily sustenance. When hunger is satisfied all excess is not only waste and refuse, but positively injurious.

Even those who are dimly aware of something wrong usually prefer, instead of remodeling their lives on physiological lines, to stuff themselves with proprietary remedies and swell the fortunes of shrewd quacks who understand them better than they understand themselves. In one of Sardou's plays a young man calls upon a doctor for advice, and is told that nothing serious is the matter, but that he must mend his ways if he wishes to rid himself of disquieting symptoms: give up late suppers, rich food, wines, go to bed betimes—in fact, live decently and soberly. Whereat the patient, barely able to control himself until the doctor has finished his sermon, bursts out with: "Oh, I know all that. You doctors are ever preaching such things. But can't you give me a pill or something to set me right?"

How shall one determine, then, how much food to eat? Let your sensations decide. It must be kept in mind that the entire function of digestion and assimilation is carried on without conscious supervision or concurrence. It should be entirely unfelt and unknown, excepting by the feeling of *bien-etre* which accompanies and follows its normal accomplishment. A sensation of fullness in the region of the stomach means that too much food has been taken.

As a rule, the meal, unless eaten very slowly, should cease before the appetite is entirely satisfied, because a little time is required for the outlying organs and tissues to feel the effects of the food that has been ingested. It has been said that the great lesson homeopathy taught the world was this: that whereas physicians had been in the habit of giving the patient the largest dose he could stand, they have been led to see that their purpose was better served by giving him the smallest dose that would produce

the desired effect. So it is with food. Instead of eating, as most people unfortunately do, as much as they can, they should eat the smallest amount that will keep them in good health.

This restriction in the amount of food is not a hardship. On the contrary, to eat so little at one meal as to be hungry at the next affords the greatest satisfaction. Hunger will ever be the best sauce, and he who can always sit down to a meal with a ravenous appetite, and rise from it with his brain so clear and his circulation so free that he can work or play immediately without discomfort, experiences one of the highest joys of life.

CLEANLINESS AN AID TO LONGEVITY

Space remains only for a word or two about the less important factors which conduce to longevity, viz., cleanliness and exercise.

The outer layer of the skin is being constantly renewed from below. The epithelial cells become thinner, dryer, and flatter as they are being successively pushed out by the growth of new cells beneath them, until they arrive at the surface, where they constitute a hard, horny layer which prevents the absorption of noxious material from within. Some of these substances which are excreted through the skin are retained upon the surface by the clothing, when, if the surface were uncovered, they would be removed naturally with the scurf that is being constantly shed or pushed off by the growth beneath.

These substances are ill-smelling and have to be removed by washing. So do the smutches of extraneous dirt which occur on the face and hands. And this is all that should be sought for in washing or bathing. The practice of soaking and steaming and coarse rubbing and scrubbing, by which rolls of scurf-skin are removed and pointed to with a sort of exultant pride as loads of dirt, can not be healthful in the long run. The scurf-skin is needed where it is, and the removal of it or of as much of it as to

expose the larger, plumper, still soft cells of the underlying cuticle is injurious. Scrub a kettle until it is clean but not until it leaks.

IMPORTANCE OF EXERCISE

The fatuity of most men with regard to exercise is most distressing. They avoid the use of their muscles in every possible way until their health gives out, and then take up the most unnatural and ridiculous methods of restoring the equilibrium. They never walk when it can be helped; they take a car to go four or five blocks, an elevator to go up one story of a building; have valets and waiters to brush their clothing, to black their boots, to serve their meals, to carry their bundles; and when they feel the lack of physical exercise, play golf or bowl, or put up dumb-bells, swing Indian clubs, or pull away at weighted ropes in their bedrooms. In other words, they carefully shun any kind of exercise that subserves a useful end, and devote themselves to that which accomplishes nothing.

The oddest thing is that if the diet were properly proportioned to the occupation, this lack of exercise would not be felt, and the consequent devotion to monkey gymnastics would not be necessary. Let

man by all means enjoy his usual pastime and profit by it to rest his mind and augment his natural forces, but not for the mere purpose of neutralizing the effects of dietetic wrong-doing.

THE PROPER AMOUNT OF SLEEP

A proper amount of sleep is absolutely essential to continued good health; but if dietetic habits are correct, it is a matter which will regulate itself. Almost every one feels languid on waking and is disposed to take another nap, no matter how long he has been sleeping. This is a morbid sensation. Lack of sleep should be made up at the beginning and not at the end. The best general rule is to rise at a given hour every morning, whether tired or not, and go to bed when sleepy.

Condensed from the *Century* for February, 1901.



"If all the wide world had been made just for me,
What a wonderful thing it would be!"



Primary Lessons

REVIEW WORK

A PERFECT WHOLE

WHATEVER thought was in Wagner's mind when he wrote the great drama of Parsifal, it represents to the teacher the power of education.

The guileless knight stands for the innocence and purity of childhood, beautiful in itself but useless to humanity. It was not until wisdom had been added to virtue that Parsifal was able to relieve the suffering monarch, and it is not until the child has grown bodily and mentally that he too is fitted to help others as well as himself.

Physiology and hygiene deal with the physical side of growth,—the building up of a sound constitution and the forming of right personal habits. At the beginning of school life, few children can understand the exact relation of the different organs of the body to one another, nor is it then wise to take up the subject from this point of view.

On the contrary, they should be led to think of the normal body as a perfect whole, made up indeed of many parts, but all of these parts working together to accomplish whatever is being done. It is the whole boy that plays ball, not merely his arms and legs, and it is the whole boy or girl which the class should study.

In reviewing the work of the year, let the main thought be what the child can do for the wonderful little house that was given him at birth and which he alone can build. It has just as many doors and windows and is just as perfectly put together as the large house in which his father or mother lives. The only difference is that the child's house is not yet finished; indeed, it is only just begun. What kind of building materials must he use to make this house larger and stronger every year? What things would hurt its growth and spoil its looks?

Bring out clearly the idea of personal responsibility in the matter. Just as soon as we are old enough to know that we have a house of our own, we are old enough to begin to learn how to take care of it, and to remember that the kind of a

house we build now is the kind we shall have to live in all our lives.

FIRST YEAR

Name two things you can do because you have a body.

What are the windows of the body? Where are they?

Find some of the doors of the body. Which one of these doors can you open and shut?

How can the body move from one place to another?

What parts of the body do you use most when you work and play?

With what part of the body do you think?

What can you do to help make your body taller and larger?

Name three kinds of food that help to make the body grow.

What kind of a body is the boy who smokes cigarettes making for himself?

Why is it better to eat apples than to drink cider?

AUTHORITATIVE QUOTATIONS

Beer is generally considered a mild, harmless drink. The statement that it contains on the average 4 per cent of alcohol is compared with the greater amount of water present with it. It is more effective to show that a liter of beer contains just as much alcohol as one-eighth of a liter of whisky. Whether a person drinks beverages containing 4 per cent or 40 per cent alcohol does not matter, for he drinks 10 times as much of the first as he would of the second.—J. PETERSEN, in *Die Enthalttsamkeit*.

Perfect health can not be enjoyed with even a moderate use [of alcoholic liquors], while it is certain that the highest possible health may be enjoyed without such use.—WILLIAM PEPPER, M. D.

Drinking children fall ill much more readily than those who do not drink, and their illnesses are likely to be more severe and more often fatal. This was very evident in the children's hospital in Berne, during an epidemic of diphtheria.—ADOLF FRICK, M. D., Zurich.

Tobacco stunts the growth of children and checks their mental development. It has a deteriorating effect upon the character, moral sensibility being blunted and conscience deadened. It impairs delicacy of thought, feeling and true Christian character in all classes and ages, especially the young. It is seldom a solitary vice, but often accompanied with profanity, general laxity of morals, and often leads directly to the use of alcoholic beverages.—WILLIAM M. MASON, M. D.

SECOND YEAR

What covers the body to keep it from getting hurt?

How should we take care of the skin? of the hair? the nails? the teeth?

How is the boy who smokes cigarettes spoiling the looks of his skin?

When is fruit good to eat? When is it not good to eat?

Why do bread and milk make a better supper for a child than bread and beer?

What parts of your body have you made stronger today by using them?

Why do we need work and play and study to help us grow?

Why do children need more sleep than grown people?

Why should we leave our windows open when we go to bed?

What are the names of the five little servants that tell us everything we know?

AUTHORITATIVE QUOTATIONS

The use of alcoholic drinks exerts an injurious influence upon the mental and physical development of children, and bad habits are cultivated.—DR. FIEDLER, Medical Counselor and Superintendent Dresden City Hospital.

I place special emphasis upon the prohibition of alcoholic drinks to children. It is scarcely credible with what levity and thoughtlessness the accustoming of children to the use of alcoholic drinks will very often be initiated and encouraged.—ADOLF STRUMPELL, M. D., Erlangen.

Alcohol hinders the physical and mental development of children. Alcohol is poison to the youthful body. Physicians of all lands who understand the facts today declare, unanimously, that children should receive no intoxicating drinks.—*Allg. Schweizer Ztg.*

The most ruinous ravages of alcohol are upon the nervous system of the child. We know in-

deed today that there is no more certain way of generating idiots than the continued administering of alcohol. Thousands of mothers systematically poison their children by this means, which stupefies them, makes them inactive and without energy, and brings them to the condition of physical and mental cripples. Away with the pernicious thought of an invigoration by alcohol! Away with the "wine tonic" in chronic conditions of weakness, anemia, languor, listlessness and depraved appetite! And above all away with alcohol from our nurseries, that we may not by our own hand lead the coming generations into sickness and degeneration!—EMIL KRAEPLIN, M. D., Professor of Psychiatry in University of Heidelberg.

I am entirely of the opinion that in most cases the foundation for future alcoholism is laid in early childhood. — DR. SMITH, Proprietor and Manager of the Schloss-Marbach Inebriate Asylum.

Alcohol has not the properties of food, but of a narcotic, and it is, therefore, not food but poison.—F. R. LEES, M. D., in the *Medical Pioneer*.

The practice of cigarette-smoking among boys has reached dangerous proportions and needs legal interference. Let the individual have all the liberty he craves to do good, but do not let him have a free hand, above all before he arrives at years of discretion, to injure himself and thus indirectly the state.—

HARRY CAMPBELL, M. D., in the *Lancet*.

Of the various forms of using tobacco, cigarette smoking and chewing are the most harmful, and doubtless are the cause of many functional derangements. Smoking by the young is in every case to be reprobated. It is more than likely that an excessive use of tobacco does occasionally deteriorate the moral character—in the same way as chloral or bromide of potassium may deprave the mind—by lowering the tone and impairing the nutrition—*Medical Record*.



"Queen rose
Of the rosebud garden of girls."

THIRD YEAR

What holds the body upright? What helps it to move? What protects it from harm?

What should you do to make yourselves neat before coming to school?

What would be a good breakfast for a boy or girl? a good dinner? a good supper?

Why should we not play hard immediately after eating?

Why do the teeth need to be kept clean? How often should they be brushed?

What does tobacco do to spoil the looks of the teeth?

What are the best drinks for children? Why are beer, wine, and cider bad drinks?

What parts of the body can we move? What can you do to have strong muscles?

Why does it do more harm for a boy or girl to sit or stand badly than for a grown person?

Name one kind of work and one game that will help to give us graceful bodies.

AUTHORITATIVE QUOTATIONS

The idea of the toxicity of the different alcohols, comprising even the alcohol of the most pure wine, is an idea admitted absolutely by all physicians, and completely established upon a wholly scientific basis.—A. JOFFROY, M. D., Professor of Clinics and Mental Diseases, University of Paris.

The moderate use of alcohol can be only gradually and quite incompletely separated from its misuse. The use of a social poison is in itself an abuse. Alcohol, not only in strong liquors but in the diluted kinds, as beer and wine, is a poison.—A. FOREL, M. D., University of Zurich.

The dangers in the use of alcohol, also the possibility of the formation of the alcohol habit, make its use as a beverage unjustifiable even if there were no other arguments against it. Children should be taught to look upon alcoholic liquors as dangerous substances, to be avoided from considerations of health and general welfare.—H. F. HEWES, M. D., Harvard University.

Boys who smoke are, on an average, years behind the boys who do not smoke, and still farther behind the girls in the same grades. The mental, moral, and physical condition of these boys is extremely deplorable and will certainly continue to grow worse unless the habit is stopped.

The cigarette smoker is already well on his way to the conditions which indicate crime, tramping, the jail, and general worthlessness. Memory goes first, closely followed by deportment, low rank in studies, bad physical condition, and general degeneracy.

The business world has found by experience, as we teachers observe continually, that the cigarette smoker is untruthful, deceitful, untrustworthy, and inefficient.—P. L. LORD, in the *School Journal*.

MY MA SHE KNOWS

MY pa he scolds me jes because
He says I'm gettin' "tough";
He says my face is never clean,
My hands are always rough;
I'm not behavin' like I should,
An' goin' wrong, I s'pose,
But ma, she takes an' pats my hand,
An' smiles because she knows.

My pa hain't got no use for boys,
He wants 'em always men;
I wonder if he's clean forgot
The boy he must a' been;
For ma, she says they're all alike,
'Bout face, an' hands, an' clothes,
An' says I'll learn to be a man;
An' ma, I guess she knows!

My pa, he says I ain't no good
At doin' anything;
I'd rather fool away the time
An' whistle, play, an' sing;
But ma, she smiles an' says I'm young
An' then she up an' goes
An' kisses me an' shows me how!
For ma, you bet, she knows!

My pa, he says I'll never be
A business man like him,
Because I h'aint got any "drive,"
An' "get up," "pluck" an' "vim";
But ma, she says, so solemn like,
A man's a boy that grows,
An' boys must have their playin' spell;
And ma's a trump, and knows!

My pa, he shakes his head an' sighs
An' says he doesn't see
Where I got all my careless ways,
That seem jes' born in me;
An' ma, she laughs, an' laughs, an' laughs,
Till pa's face crimson grows,
An' then she says, "'Tis very queer,"
But somehow, ma, she knows!

My ma, she knows most 'everything'
'Bout boys and what they like.
She's never scoldin' 'bout the muss
I make with kites and bike;
She says she wants me to be good
An' conquer all my foes,
An' you jes bet I'm goin' to be,
'Cause my sweet ma, she knows!

—*Detroit Journal*.

PRIZES IN TEMPERANCE PHYSIOLOGY

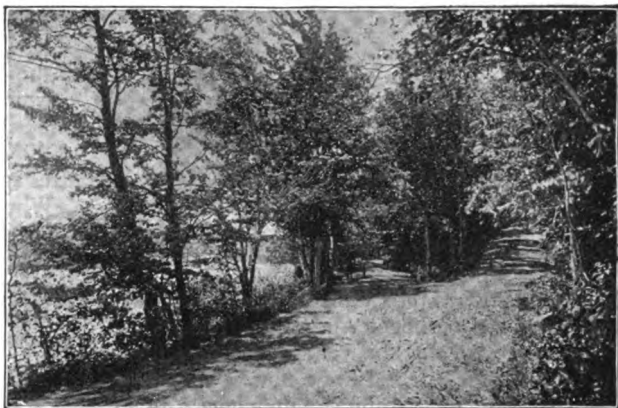
SOME twenty years ago, a Loyal Legion Temperance Society was organized in one of the most aristocratic sections of New York City, a feature of the work being the maintenance of a Boys' Free Reading Room. At that time New York had no Temperance education law, and the members of this society were among the favored few who then received instruction as to the proper care of the body, including the hygienic reasons for total abstinence. These youths grew up a stalwart company of total abstainers, physically and mentally fitted for the responsibilities of wealth and high position.

After temperance physiology became a required subject in all the public schools of the state the society disbanded for a time, but has lately reorganized for the purpose of co-operating with the schools in securing a better enforcement of the law which had already brought about a decided improvement in many homes.

To increase the interest of pupils in this subject, the society offers fifty-three prizes to the scholars in the Fifth, Sixth, and Seventh Grades of the Public Schools in the City of New York, including all Boroughs, for the best original compositions on the subject, "Our Bodies as the Houses in which we live, what we are taught

In addition, to the school from which is received the largest number and the best prepared compositions will be given some useful or ornamental object of the value of \$25 for the use of that school, to be selected with the advice of the principal or the head teacher.

The following well known citizens have con-



"Our own familiar world, not yet half known, nor loved enough,
Lies here before us."

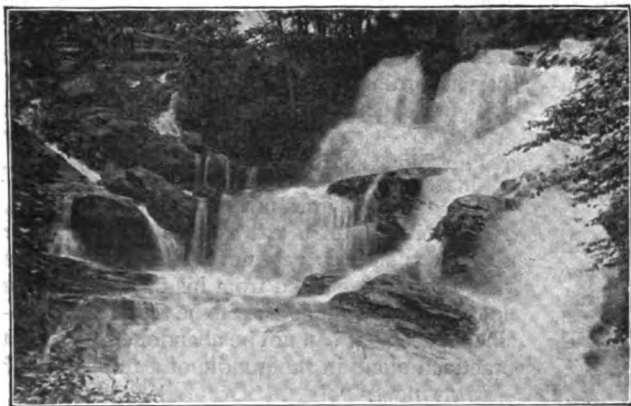
sented to act with Mr. Seth B. Robinson, the President of the Loyal Legion Temperance Society, as a committee to pass upon these compositions:

Professor Harry Thurston Peck, Editor of the Bookman.

Rev. David J. Burrell, D. D., Pastor Marble Collegiate Church.

Mrs. Ballington Booth, of the Volunteers of America.

Mr. James G. Cannon, Vice President of the Fourth National Bank.



"A picture of delight! A brook that waters in its flight
The flowers and harvests of our farms."

about them, and how we can make them the best kind of Homes."

There is one First Prize, consisting of a Gold Medal and \$20 in cash; two Second Prizes, each consisting of a Silver Medal and \$10 in cash; and Fifty Third Prizes, each consisting of a Bronze Medal and \$2 in cash.

LEARNING TO DRINK

A zealous Sunday school teacher, who had gathered up a class of boys hitherto neglected, was one morning talking to them about the great evils of intemperance.

"Boys, I wonder how people learn to drink?"

A bright little fellow said, "I know; by tasting."

Here's a new drink for those who fain would do as royalty does: When entertaining his guests on the imperial yacht Hohenzollern at Naples, the Kaiser drank orange juice and mineral water.—*Boston Journal*.

*Courtesy of the Boston & Maine Railroad.



Grammar Lessons

REVIEW
WORK

THE PARTS THAT MAKE THE WHOLE

VISITORS at the Commencement exercises of the Tuskegee Agricultural and Industrial Schools this year heard no glittering oratory and listened to no flowery essays.

Instead, the graduating students gave a practical exhibition of what they could do. One young man explained the value of deep plowing, and showed the better growth of plants in soil thus treated. Another went through the different processes of butter-making, producing an article of excellent flavor and quality. A young woman proved herself a competent milliner by making and trimming a hat. A house-painter, a carpenter, a tailor, a blacksmith, and a broom-maker each, in turn, illustrated his trade learned while in the school, and demonstrated beyond cavil that he had become an expert workman and was abundantly able to earn his own living.

More work of this kind is needed in all our public schools. It is the best possible assurance of future good conduct and upright citizenship. The youth who has learned how to use his hands as well as his head in any form of honorable employment will seldom be found in the ranks of the idle and vicious.

Bring this thought prominently before the minds of grammar school pupils as they review what they have already learned of the human body. Call attention to the fact that it is made up of many parts, each having its own work to do but being at the same time dependent upon the health and efficiency of all the other parts.

Show how this resembles life in any community. Each man has to support himself, but each is dependent in many ways upon others, and each, in his turn, affects them for good or evil. If he is sober and honest and industrious, he is making it easier for everybody else to live uprightly; if he is not what he should be, the moral tone of the community is correspondingly lowered. This is the habit-forming period of life, and the use each one of us makes of it is momentous.

FOURTH YEAR

Why are the bones of children softer than those of grown people?

Name two kinds of food that are needed to make the bones grow firm and strong.

Why do boys have stronger muscles than girls? How can girls strengthen their muscles?

How does the food you eat get to every part of the body?

Name three drinks that are healthful and three that are harmful.

Why is it hard for the boy who smokes cigarettes to keep up with his classes?

Why is the brain the most important organ in the body?

What are the organs of the body that keep us alive?

Why is it that a daily cold bath can prevent one from taking cold easily?

AUTHORITATIVE QUOTATIONS

Naturally the lighter alcoholic drinks cultivate a taste for the stronger liquors. Those who make statements in conflict with the indubitable facts of statistics must either be ignorant of these facts, or else they attempt to pervert them to apologize for their own drinking habits.—D. L. MEYER, M. D., University of Gottenberg.

Wine, like the other alcoholic beverages, leads to the abuse of it and tends to place man in a state of irresponsibility. There were drunkards in all countries of vineyards long before any one drank beer and brandy.

Is not the fact already quite characteristic that according to the Jewish legend the man who first planted the vine, was also the first drunkard?—GUSTAV VON BUNGE, M. D., Professor of Physiological Chemistry, University of Basel.

The drunkard does not compel you to drink, or the opium-eater to eat opium, but the smoker makes you smoke; nay more, visibly inhale the very vapor just ejected from his own mouth. Is not this a minor immorality to be regretted and—since it seems it can not be abandoned—at least practiced alone in the middle of a ten acre lot?—MATTHEW WOODS, M. D.

To state that alcohol in any quantity is safe is a woeful misinterpretation. No one can yet state at what point the secondary injurious effects begin, and no one can state what is a small and what is a large dose.—H. W. CONN, Professor of Biology, Wesleyan University.

Until mankind can rise above beer and tobacco, the race will remain degraded as it now is, mentally, socially, and physically.—*The Medical Pioneer.*

FIFTH OR SIXTH YEAR

Why does one need strong lungs in order to be healthy?

How can the lungs be made larger and stronger?

In what ways does the boy who smokes cigarettes injure his lungs and throat?

Name the different classes of food. What does each furnish the body?

Why is beer made from grain a harmful drink, while bread made from grain is a good food?

Name three uses of the skin. How should we take care of the skin?

What can a young person do to make himself grow taller than he otherwise would be?

Why are boys who early begin the use of tobacco often under-sized?

What is habit? How may a habit be a help to us? a hindrance?

AUTHORITATIVE QUOTATIONS

The moderate drinker injures his tissues by degrees. He may appear unharmed; he fancies he is, and scouts the idea that his drink is injuring him in the slightest. But sooner or later illness comes on, and the organs that have been slowly weakened are unable to assist one another to throw off the disease, and so he succumbs when, as an abstainer, he could have pulled through.—J. J. RIDGE, M. D., in the *Medical Pioneer*.

Science has demonstrated that alcohol does not possess one of the beneficial properties that have been falsely attributed to it, that it is useless and dangerous.—DR. DE VAUCLEROY, Professor of Hygiene in the Military School of Belgium.

Alcohol is a poison to body and soul. It deprives the workman of his skill and working ability. It diminishes his strength. It makes him susceptible to all diseases. It weakens the race.—H. BARELLA, M. D., Royal Medical Academy of Belgium.

Supt. R. A. Ogg finds that the cigarette-smoking boys in the public schools of Kokomo, Ind., are two years behind the non-smokers of their own age in their studies. An investigation was carried on by each teacher, and he summarizes their reports as follows:

"The investigation concerns nearly twelve hundred boys from the first grade through the high school. More than one-third of these admit that they do smoke or have smoked. Those who say they never smoked are counted in the list of non-users. The smokers average one year older than those of their grade who are non-smokers. The inveterate smokers are two years behind the non-users. This is true through all the grades.

"That the divergence does not increase in the higher grades is doubtless due to the fact that those who smoke fail and drop out of school at an earlier age and in larger numbers than those who do not smoke. If we take only those who smoke habitually, the difference in age in favor of the non-smokers is nearly two years. Here is a terrible loss to be charged up to the cigarette habit.

"But there are other losses; the teachers' reports show that the conduct of the smokers is far below the average. Some of the reports say of them: Self-control poor, inattentive,

not trustworthy; bad memory, careless, excitable, nervous, bad conduct; lazy, sleepy, slow to move; very dull, blank look; heavy eyes, sick frequently; never did any good work in school; no energy, naturally bright, but no power of concentration; vacant stare, gloomy, listless. One boy, who failed regularly, quit the habit and now passes successfully. Physical deterioration is also a very noticeable feature, especially in shrinkage of chest measurement."

These conclusions so startled the people of Kokomo that more than 400 smokers stopped the practice and the teachers report an immediate improvement in the class exercises.—*Teachers' Institute*.



Getting ready for examinations.

School Physiology Journal

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HENRIETTA AMELIA MIRICK, Assistant Editor

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The lily has an air,
And the snowdrop a grace,
And the sweet-pea a way,
And the heart's-ease a face—

Yet there's nothing like the rose
When she blows.

—CHRISTINA G. ROSSETTI.

TEACHING THE IDEAL

A SOUND body, the obedient servant of an enlightened mind, constitutes the physical ideal for a human being. How can this ideal be reached, and by the largest numbers are twentieth century questions. Effects do not happen without a cause in this world of law. There are laws of health, laws that apply to what to do and to what not to do, that must be obeyed by those who would reach this ideal. Hence, ignorance of these laws is a chief cause of their violation. Enlightenment as to what they are is a first step toward bodily soundness.

The question is asked, What should the schools teach to secure this ideal? Shall it be only the positive, what should be done, and not the negative, what should not be done? The environment of modern life is very complex, sometimes inviting to right paths whose ways are pleasant and which lead to the ideal life, and again enticing to paths which, to the uninformed, look equally attractive at the start, but which end in destruction. To the latter belong the drinking customs which have been handed down from past ages of ignorance concerning the real nature and consequent effects of alcoholic drinks.

These drinks were at first supposed to be a kind of elixir of life because of their exhilarating effect. Modern science has dispelled the elixir-of-life theory, and shows by actual demonstration that alcohol is a narcotic poison which has the power when taken even in what is called moderation to create an uncontrollable and destructive

appetite for more. This truth will yet so permeate the convictions and actions of civilized people that alcohol as a beverage in any and all forms will be abolished from human habits and traffic.

But that time has not yet come. Invitations to use alcoholic beverages and tobacco are met in society, on the street, and sometimes even in the home. The example of others intensifies this invitation. We are told that we should emphasize only the beautiful, the ideal. Shall the schools then be silent concerning the peril of yielding to such temptations because the results of yielding, so far from being ideal, are unlovely and harmful? Shall one who knows the unseen danger fail to warn a group of innocent, frolicsome children who are reaching for the blossoms on overhanging boughs that hide from them a precipice below? Thus to fail is to be responsible for the fate that would follow the slipping of those young feet over the brink of a chasm they do not see and do not know exists. As culpable, on the plea of holding up to children only the ideal, would be the failure to teach the dangerous character and disastrous effects of alcoholic liquors to the rising generation, who are surrounded not only by temptations to use these drinks, but who may have inherited a legacy of physical and moral weakness from drinking parents.

In our country government exists for the people, hence, for the protection of every child and of the state soon to be governed by those who are now children, the study of the nature and effects of alcoholic drinks and other narcotics as a part of physiology and hygiene is universally compulsory. Under this form of education we have grown to be the most sober of the great nations, and this sobriety is recognized as one factor in the greatness we rejoice over.

The plea for withholding the study, because only the beautiful, the ideal should be held up before the child, is sophistry and special pleading. It is not brought forward in other matters of hygiene. The ill effects of defective sanitary arrangements are rightly urged as reasons for removing such unhealthful conditions. The ideal path of life is one of intelligent rejection of wrong because it is wrong, and of choice of the right because it is right. The ideal education is an all round instruction adapted to the child and his environment, and one that teaches him the reasons for choosing the right and rejecting the wrong which have been revealed by experience.

There are two distinct classes of opponents to the instruction of children in early life as to the nature and effects of alcoholic drinks and other narcotics.

A saloon-keeper in a New England town re-

cently said to a prominent business man: "There is not much money in the saloon business now. Temperance education in the public schools is spoiling our trade. The children tell their parents what they learn."

This incident explains the opposition of the first class of opponents to this study, those interested in a trade the profits of which are gone when the old drinkers drop off, unless the drink craving is fastened upon the children who will furnish a new relay of customers.

Most men who drink are glad to have their children taught not to follow the parental example. Here and there are exceptions to this rule, and these exceptions furnish the second class of opponents. Furthermore, the personal example of the teacher and the precepts the state requires him to impart should be in harmony. If such is not the case, the teacher or educational official is ordinarily restive under a temperance education law, and all sorts of excuses and subterfuges are devised to evade its spirit and letter. But the all round teachers of the United States, who are in the overwhelming majority, are both too honest and too well fitted for the work committed to them by the state to be misled by the claim that what is commonly understood as physical culture, which, though important in itself, is only a part of hygiene, is all that the state requires taught its children on this subject, or all that is needed if we would so advance in civilization as to attain the ideal physical, mental, and moral life.

SAVE THE BOYS

Temperance teaching in our schools has been of incalculable benefit. Let the work everywhere be kept up to a high standard. The physiologies of today do not overdo the subject one whit.

Teachers, don't be sidetracked in your work

by the emissaries of the saloon. By overwhelming preponderance, the scientific and medical experts of today stamp the use of alcoholic beverages as dangerous and damaging to body, mind, and soul. But we do not need experts to tell us this. Evidences are all about us. Horrible object lessons are all too plentiful. The past winter has been prolific in examples of the effects of alcohol. Teach the subject just as dispassionately, vigorously, and thoroughly as you do any other of the school subjects. Let the youth understand that he smirches his reputation by entering a saloon. Many of our great railways and mercantile establishments are barring out all drinkers of intoxicants. Old soakers may be beyond reach; but, teachers, do your level best to save the boys.



The kittens are as glad as we are that vacation is here.

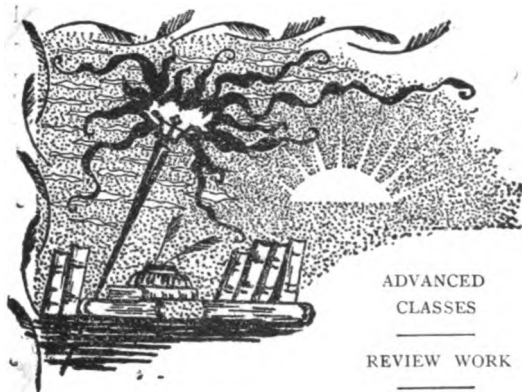
British physicians, 15,000 strong, petition for compulsory temperance education. It is about time, with 939 of every 1000 people dying paupers, and drink the cause of 75 per cent of it.—*Michigan Moderator-Topics.*

At the recent 28th annual convention of the Catholic Total Abstinence Union of the archdiocese of Boston, National Secretary J. Washington Logue, of Philadelphia, and other speakers laid stress on the im-

portance of educating the children, especially in parochial and other schools, in the principles of total abstinence.

The committee on resolutions, Rev. Dr. Mullen, of Boston, chairman, recommended the formation of temperance societies in schools and of more temperance societies composed of women, and hoped that Catholics engaged in the sale of intoxicating liquors would take the advice of the council at Baltimore and find other modes of making a living.

Through the courtesy of Mrs. Laura G. Fixen, of Chicago, we are in receipt of some interesting temperance wall charts prepared by the Victorian Alliance for the public schools of Australia.



ADVANCED
CLASSES
REVIEW WORK

A POWERFUL INSTRUMENT

IT has been estimated that the world would starve in two or three years if we should stop the process of production.

Every man is a consumer, consequently it is the duty of every man, says a well known writer, "to return by way of equivalent something that the world needs. It may not be corn, or potatoes or grain, it may not be gold or silver. It may be a thought, a poem, a song, a statue; it may be cheer, it may be inspiration, it may be teaching, it may be something that will build up the world and help to make it better. But return something he must. If he does not—what do you call the man who takes things without paying for them?"

There is no more encouraging feature in modern education than the growing tendency to fit pupils for a useful life in some form or other. This explains the present widespread interest in hygiene and temperance. A genius has sometimes been an invalid, but the majority of people are not geniuses, and, even if they were, there is no question but that they would be infinitely more valuable to themselves and to the world if they were in perfect health than if handicapped by bad habits or disease.

No limit can be set to the accomplishments of the human mind, but this mighty agent works only through instruments, the most indispensable of which is a healthy body.

Emphasize health as one of the best assets in the world, and one, moreover, which is within reach of everybody who is willing to live the right kind of a life. Help the class decide what they are doing to preserve and increase this asset. This will lead to a discussion of what foods are most suitable for young people; of the best kinds of exercise; of suitable clothing according to the weather and season of the year; and of other hygienic conditions in the home and elsewhere. It will suggest also what must be avoided as well as sought,—late hours, careless exposure, improper food and drink, bad

habits of all kinds. It will show why the beginnings of evil, the first cigarette or the first glass of beer or wine, are to be avoided.

Above all, insist upon the thought that every young person is thus to take care of himself for a definite purpose,—in order that he may be able to do something for others, and thus return to the world and to humanity a full equivalent for what he has received.

AUTHORITATIVE QUOTATIONS

There is this difference, so, at any rate, moderate drinkers tell me, between alcohol and food, viz., that a single glass of the former seems to create the desire for more. Two famous dignitaries, now both passed away, Canon Woodcock, of All Saints, Axminster, and Canon Harvey, of Gloucester, both told me that they had no difficulty in abstaining altogether, but that a single glass of wine made it difficult to refuse a second, and a third was then eagerly desired. In fact, both said that total abstinence was absolutely safe and perfectly easy, but moderation was delusive, dangerous, and required a constant guard. The moment you take a glass of wine, both remarked, you have crossed the Rubicon; you are on forbidden ground. Now, whoever heard of a first apple or a single pear creating a strong desire for a second, and then a third, and so on up to twenty or thirty?—A. J. H. CRESPI, M. D.

He who can drink moderately without ever becoming intoxicated may have the drinking habit, but he has not acquired the disease. This, however, does not prove that he possesses superior intelligence or will power. It only indicates that his nervous system is less susceptible than others to the poisonous action of alcohol. It is purely a physical difference that distinguishes the moderate drinker from the helpless drunkard.—CHARLES J. DOUGLAS, M. D., Boston.

What then is the action of alcohol? It weighs down the safety valve. The result of that is that a very short spurt at high pressure may be made. We know what happens in the case of a boiler when the safety valve is weighted—the engine may be driven at a high speed for a short space of time. If the boiler be very new and strong, and the loading of the valve be not excessive, the strain on the boiler may not be evident, but every engineer knows that the life of that boiler is shortened. If the boiler be not so new, and has undergone some wear and tear, we get slight springing of the plates, and an escape of steam, and in order to keep up the pressure constant "firing-up" is required, and the springing and leakage become more and more apparent as time goes on. The effect

in weak, aged, or badly constructed boilers of weighting the safety valve is still more disastrous.—G. SIMS WOODHEAD, M. D., Professor of Physiology, University of Cambridge.

Alcohol lowers muscular force and efficiency. This is conclusively shown by the fact that those who engage in athletic sports must stop drinking if they expect to excel. No prize fighter, ball-player, oarsman, or any other kind of athlete can keep up drinking habits without so injuring himself in a few years that he is relegated to the rear as a back number.—E. STUVER, M. D., Ph. D., Colo.

Alcohol, then, kills in large doses, and half kills in smaller ones. It produces insanity, delirium, fits. It poisons the blood and wastes the man. The brain suffers most injury, both in structure and function. Next comes the liver, in the order and amount of suffering; and there is no vital organ in the body in which there is not induced, sooner or later, more or less disorder and disease.—JAMES MILLER, M. D., F. R. S. E.

I know of no agent, unless it is opium, that makes self-deceivers of good men more rapidly than does tobacco. It seems so to befog the brain that the user loses the power of fine discrimination between right and wrong. It makes good men selfish, irritable, cross, irascible, and self-deceivers. In some particulars it is worse than liquor. It is a habit far more difficult to break, and is an entering wedge to almost all kinds of vice. That it does produce a weak-mindedness that affects posterity there is ample evidence. Statistics will show that there are very few inmates of our penal institutions whose parents have not been addicted to the use of tobacco.—A. M. HUTCHINSON, M. D.

In an experimental observation of 38 boys of all classes of society who had been using tobacco for periods ranging from two months to two years, 27 showed severe injury to the constitu-

tion and insufficient growth, and 32 showed irregularity of the heart's action, disordered stomachs, cough, and a craving for alcohol. Within six months after they had abandoned the use of tobacco, one-half were free from their former symptoms, and the remainder recovered by the end of the year.—J. M. FRENCH, M. D.

The almost universal use of tobacco and its effects upon the human system are so powerful that it would be well to give some of its special evil effects in causing and keeping up disease. Its effect upon the human system is so deteriorating that it lessens the power of the body to resist disease, and predisposes the system to nearly all maladies. How often do we see the effects of tobacco smoking in the redness and

dryness of the mucous membrane of the throat. Smoking as a cause of throat disease is so common that we have come to recognize "smoker's sore throat" as a distinct malady. Again, the effects of tobacco on the heart are so well known that "tobacco heart" is a recognized disease; and while in the beginning the effect of it is purely functional, I am satisfied from my own observation that its long continued use will cause organic disease.—WILLIAM



A country road that leadeth "on and up where nature's heart
Beats strong amid the hills."

M. MASON, M. D.

WHEN THE BIRDS BRING BACK THE SPRING

BY ALICE E. ALLEN

Oh, the lilac buds a-bursting
Round the nest that rocks and swings,
Oh, the stir and whirl of bluebirds,
Each a note with two bright wings.
Oh, the glints of gold and orange,
Oh, the tints of rose and red,
Oh, the wrangling and the jangling
Of the blackbirds overhead.
Oh, the bonny robin redbreasts,
Bubbling o'er with songs to sing,
Oh, the music of the Maytime,
When the birds bring back the spring!

BOOK NOTICES

OUR BODIES AND HOW WE LIVE. Revised edition. By Albert F. Blaisdell, M. D. 12 mo. Cloth. 352 pages. Mailing price 75 cents. Ginn & Company, Boston.

The advancement of sanitary and medical knowledge during the past few years has made imperative a revision of this justly popular book, and we are glad to call attention to the most important features of the latest edition.

Account has been taken of the discoveries of medical science and improved methods in personal hygiene. New illustrations have been added, and a portion of the text has been entirely rewritten. The book is also changed for the better in various mechanical details. Some years ago, a prominent educator asserted that with this series of physiologies he could take a grade of a hundred children and so convince them of the danger of tampering with alcohol and tobacco that before the three years were gone nine out of every ten would be saved from these iniquities. What was true of the older edition holds equally true in this latest work. The effects of these narcotics, while not emphasized to the exclusion or overshadowing of topics in physiology and hygiene, are yet given their due place, and are so clearly and fully set forth as to be of inestimable value to the teacher in presenting this phase of the subject to her pupils.

THE SCIENCES, by Edward S. Holden. Ginn & Company.

In this readable little book one is introduced to the elements of astronomy, geology, physiography, and the like, presented in the form of a conversation between four cousins and an older brother and sister. Just such questions on natural phenomena are discussed as would be likely to suggest themselves to a company of wide awake young people, and mysteries which have seemed magical resolve themselves into easily explainable facts under the tutelage of the exceedingly wise undergraduate. Some mistakes are to be noticed, as for instance the statement that the sun and stars do not move, but as a whole the book is not only interesting but gives a great amount of information which young people will enjoy while assimilating.

A DISCOVERY

BY SUSAN HARTLEY

Our Teddy went out by the stream one day
Where an airy flag-flower grew,
And looked out over the ripples gay
And saw reflected its cup of blue.

Two deep lines grew in his forehead fair,
Then he said with a wondering laugh,
"O, Auntie! a lily is sitting there,
And the stream has tooked her photograph."

BE A MAN

A youngster stood upon the street
And cried and cried and cried,
For it had lost the money and
Had dropped the eggs beside.

"Oh, me, Oh, my!" said Parson Good
As up he stepped to scan
The tearful face and rumpled head,
"There, now! Come, be a man!"

Then something very like a smile
Revealed two rows of pearl.
"Please, sir, how can I be a man
When I've a little girl?"

—Selected.

TEMPERANCE INSTRUCTION IN HUNGARY

THE Hungarian Minister of Instruction has issued a circular to the inspectors of schools urging them to see that the teachers give instruction to the scholars on the subject of alcoholic drinks. In this circular he says:

"Alcoholism gains more and more upon our people, and wherever it appears it is followed by its inseparable companion—misery. With this misery comes the loss of mental and physical capacity; the love of work as well as the capacity for it diminishes; the sacred bonds of the family life, which are the firmest supports of the state and of society, are loosened; the religious sense is enfeebled; in a word it means material and moral ruin. The school, one of the most important and beneficent factors of the moral life, can not remain inactive before this double danger that threatens our people. I know that the school by itself is too feeble to fight this redoubtable enemy, but I count upon society in its entirety coming to your aid, and by perseverance there will be success here as in many civilized countries.—*Temperance Record.*

We would remind our subscribers that the SCHOOL PHYSIOLOGY JOURNAL is issued only during the ten months of the school year, from September to June inclusive, no numbers being published for the months of July and August.

Subscriptions which end with the June number should be renewed as early as the middle of August to secure promptness in mailing the September number which is sent out September 15.

CONTENTS OF VOLUME XIII

SEPTEMBER 1903—JUNE 1904

AUTHORITATIVE QUOTATIONS

Alcohol	
A Poison and Narcotic	10, 12, 33, 35, 45, 61, 113, 135, 142-3, 150
A Stimulant	12
Effects of on	
Cells and Tissues	10, 14-5, 24, 74, 125
Character and Morals	20, 61, 136, 142-3
Digestion and Assimilation	12, 20
Growth and Health	20, 41, 125, 142-3, 148-9
Heart, Blood, and Circulation	36, 74, 142
Heat Production	10
Mental Ability	41, 61, 114, 135-6
Muscles and Working Ability	10, 12, 14, 40, 135, 143, 149, 156
Nervous System	12, 14, 20, 61, 135, 142-3
Organs of the Body	15, 41, 61, 125, 143
Respiratory System	36, 45
Secretion and Excretion	74, 143
Special Senses	107, 119, 136
Food Value of	10, 24, 34-6, 41, 143, 149, 156
In Wine, Beer, and Cider	33, 61, 84, 142-3, 148
Alcoholic Appetite	34, 84, 113-4, 135, 143, 149-50
Fermentation	12, 84, 142
Tobacco	
Composition of	29
Effects of on	
Brain and Nerves	103, 119
Character and Morals	29, 40, 56, 103, 119, 136, 148-50, 157
Growth and Health	29-30, 40, 45, 56, 103, 119, 148, 150, 156
Heart and Circulation	30, 103, 157
Mental Ability	29-30, 40, 45, 56, 103, 119, 136, 150, 157
Muscular Power	103
Organs of the Body	30, 56, 119, 149
Respiratory System	29, 45, 103, 157
Skin	103
Special Senses	29
Smoking Leads to Drinking	30, 103, 148

BOOK NOTICES

Agriculture for Beginners: B. S. and H.	48
Arctic, Children of the: Peary	96
Bacteria, Yeasts, and Molds: Conn	112
Bodies, Our: Blaisdell	158
Boston, A Guide Book of: Bacon	48
Castle, The Wonderful: Schoolmaster	144
Delineator, The	32
Education, A Broader Elementary: Gordy	64
Epicure, The Glutton or: Fletcher	96
Folk, Insect: Morley	62
Life and Laws, Psychic: Sahler	64
Management, A New School: Seeley	48
Man Who Pleases, The: Cone	128
Nutrition, The A. B.—Z of our Own: Fletcher	96
Physical Geography, The Elements of: Houston	62
Reader, Standard Second: Funk & Wagnalls	128
Schoolrooms, The Lighting of: Rowe	144
Schoolroom, The Hygiene of the: Barry	144
Schools, Nature Study in Elementary: Wilson	62
Sciences, The: Holden	15, 158

Sick and Convalescent, Food for the: Farmer	144
Six-Footed, Ways of the: Comstock	62
State, The Ship of: Those at the Helm	64
Truth, Teaching: Wood-Allen	48
Virtues and their Reasons, The: Bierbower	15
Well, How to Keep: Crandall	96

EDITORIALS

Alcohol, The Nation's Bulwark against	90
Alcohol, What Think ye of	25
Body, Alcohol in its Relations to the	41
Difference, A Verbal not a Real	138
Fifty, Reply to the Committee of	121
Fifty, The Committee of	26
Ideal, Teaching the	154
Nations, The Battle of the	11
Peril, The Immigration	76
Protest, An Emphatic	57
Safeguard, Education a National	108
Scientific Temperance Teaching, Attack on	75

ILLUSTRATIONS

Angels: Fra Angelico	61
Angelus, The: Millet	107
Annunciation, The: van Eyck	127
Annunciation, The Angel of the: van Eyck	115
Arboretum, Bridge in the: McD.	139
Boston & Maine Views: Photographs	99, 143, 157
Bridge, London: Photograph	19
Carl: Photograph	55
Castle, Rheinstein: Photograph	35
Chamonix, Showing Glacier des Bossons	73
Conception, The Immaculate: Murillo	51
Cope Children, The: Photograph	137
Day, Composition: Geoffroy	43
Doors, Closed: Geddes	30
Dorothy: H. A. M.	39, 149
Emperor and Crown Prince, The German	93
Farmhouse, A German (Front View)	109
Farmhouse, A German (Rear View)	111
Frances, Albert, Daisy: Photograph	119
Galen: Photograph	87
Geneva, The City and Lake: Photograph	26
Germany, The Royal Family of: Photograph	4
Gesang: Lefler	121
Gipsy Team, The: Knaus	45
Glacier des Bossons, Ice Grotto in	73
Gleaners, The: Millet	9
Goats, Harold and his: H. A. M.	7
Goodnight: Photograph	71
Gould: Photograph	135
Gratulation: Lefler	122
Hyacinths, Girl with: Photograph	125
Infant Jesus and St. John: Murillo	58
Ink, Spilled: Igler	153
Lester: Photograph	69
Madonna and Child: Murillo	63
Meeting, The: Bashkirtseff	47
Peary, Ahnighito: Photograph	91
Permission, Without the Artist's: Vautier	103
Petrucchio: Richter	67
Physician, The Little: Photograph	105
Post Children, The: H. A. M.	31, 147
Potsdam, The Marble Palace at: Photograph	15
Rhine, Vineyards on the: Photograph	83
Theodore: McD.	23
Temptation, Pussy's: Rotta	141
Tilsit, Queen Louise at: Photograph	2
Washington, Ancestral Home of: H. A. M.	85
Washington Elm at Cambridge: Photograph	89

LEADING ARTICLES

Alcohol Question, The Present Attitude of	
Physiology in Regard to : Helenius	33
Children, The Duty of the State to the	81
Live Long, How to : Tracy	145
National Power, Temperance Education an	
Element of	17
Progress, The March of	65
Public Schools, Physiology in the : Paddock	97
Public Schools, What Training in Physiology	
and Hygiene may we Reasonably Expect	
of the : Sedgwick and Hough	129
Seas, Across the	1
Temperance : Kirk	113
Temperance Teaching, Why, When, and How	
it should be Given in the Schools	49

MISCELLANEOUS

Alcoholism, Modern Civilization and the Bat-	
tle against : Bergmann	20
Beer-Drinkers, Converted : London Mail	137
Boys, Save the : Moderator-Topics	155
Boys, Tobacco Using among : H. A. M.	116
Boys, What it is that Makes them Bad : Riis	111
Bremen Anti-Alcoholic Congress : H. A. M.	12
Canteen, A Non-Alcoholic : Temp. Review	132
Children, Alcohol and : Demmie	20
Guides, Blind : M. H. H.	89
Hungary, Temp. Instr. in : Temp. Record	158
Hygiene : Juettner	67
Japan, Scientific Temperance in : H. A. M.	104
London, School Hygiene in : N. Y. Tribune	47
Middle States, Temp. Ed. in : M. H. H.	78
Preacher, the Kaiser as a : Selected	94
Reception to Mrs. Hunt : H. A. M.	48
Schools, Temp. Physiology in : M. H. H.	126
Study, Course of : M. H. H.	32
Teachers, Co-operation of : M. H. H.	52
Teachers, Good Work of : M. H. H.	4
Teachers, Salary of : Brooklyn Eagle	80
Temperance Physiology, Prizes in : H. A. M.	151
Temperance Question : Wright	80
Temperance Physiology, Pennsylvania	
Physicians and : H. A. M.	31
Total Abstinence, Life Ins. and : H. A. M.	31
Tuskegee : H. A. M.	112
Children, Snap Shots at Foreign : C. F. S.	46
Children, Taught to be Cleanly : Reynolds	7
Education, The Safeguard of : M. H. H.	111
Efficiency : Effort Increases : Mod. Topics	112
England, Good News from : C. F. S.	120
England, Temp. Teaching in : Alliance News	80
Farmhouse, A Visit to a German : C. F. S.	110
Food, Alcohol as a : Jour. Amer. Med. Ass'n	104
Food, Definition of : H. A. M.	24
France, Forward Movements in : C. F. S.	105
Good Templars, S. T. Indorsed by : H. A. M.	32

POEMS

Accounted For : Harper's Young People	10
April! April! Are You Here : Goodale	120
Chickadee, D. D., The Rev. Mr. : van Sant	128
Child, The Busy : Peabody	4
Christmas : Field	62
Christmas, Constant : Brooks	56
Christmas, The New : Stetson	49
Crisis, The Present : Lowell	111
Daisy, The : Cort	144

Discovery, A : Hartley	158
Early, Go to Bed : St. Nicholas	7
Easter : Larcom	122
Edelweiss : Moore	74
Gentleman, A Little : St. Nicholas	47
God, Children of : Brooks	52
Godfrey Grows, When : Elder	40
Harmony, Four Part : Stryker	25
Hills, The Heart of the : Boston Transcript	17
Hope, A Song of : Stanton	65
Knows, My Ma She : Detroit Journal	150
Life, Labor and : Morse	1
Magic, Sunrise : Whitney	67
Man, Be a : Selected	158
March, Mistress : Greer	112
May, The Gifts of : Thomas	129
Night, Always a : Jackson	75
Open, In the : Stringer	94
Peace, Christmas : Gatty	64
Peacemaker, The New Year a : Hutt	77
Prison, Self the Only : van Dyke	90
Rain, April : Sherman	116
Spring : Sill	116
Spring, The Call of : Ruskin	97
Spring, When the Birds Bring Back the :	
A. E. A.	157
Stars and Stripes, The : Selected	91
Stranger, A Little : Primary Education	80
Summer, Harbingers of : Chase	113
Summer, Indian : van Dyke	33
Treasures, Hidden : Youth's Companion	88
Trees, Winter : Tynan	63
Way, The Better : Coolidge	81
Winter, In : Putnam	67
Winter, The Passing of : Bugbee	100
Woods, Flowering and the Flaming	11
Woods, The Heart of the : Selected	20
Year, For the New : Gosse	96
Year, The Joy Month of the : Burroughs	132
Year, The Queen of the : Wetherald	145

SUGGESTED LESSONS

Advanced	
High School	
Body, The Groundwork of the	13
Others, Responsibility to	95
Seventh or Eighth Year	
Citizenship, Beginnings of	92
Drinks, Alcoholic	140
Muscles, The	37
Intermediate	
Fifth or Sixth Year	
Body, The Framework of the	123
Blood, The	72
Habit, The Tobacco	27
Fourth Year	
Brain and Nerves, The	59
Food	8
Senses, The Special	106
Primary	
First Year	
Body as a Whole, The	5
Cigarettes	101
Trunk, The Body	53
Second Year	
Exercise and Rest	68
Food and Drink, Unwholesome	21
Touch, The Sense of	117
Third Year	
Brain and Nerves, The	133
Muscles, The	37
Others, The Rights of	86

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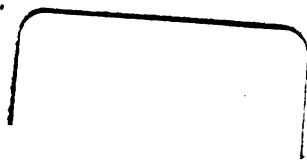
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